DOCUMENT RESUME

ED 440 736 PS 028 471

AUTHOR Xiang, Zongping; Schweinhart, Larry; Hohmann, Charles; Smith, Charles; Storer, Eileen; Oden, Sherri

TITLE Points of Light: Third Year Report of the Michigan School Readiness Evaluation.

INSTITUTION High/Scope Educational Research Foundation, Ypsilanti, MI.
PUB DATE 2000-02-28
NOTE 74p.
AVAILABLE FROM High/Scope Educational Research Foundation, 600 North River Street, Ypsilanti, MI 48198-2898. Tel: 734-485-2000; Fax: 734-485-0704.
PUB TYPE Numerical/Quantitative Data (110) -- Reports - Evaluative (142)
EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS Child Development; *Early Childhood Education; *Early Intervention; Educational Quality; High Risk Students; Longitudinal Studies; Outcomes of Education; Parent Participation; *Preschool Children; *Program Effectiveness; Program Evaluation; *School Readiness; State Programs
IDENTIFIERS *Michigan

ABSTRACT

The Michigan School Readiness Program (MSRP) is the state's early childhood education program for 4-year-olds at risk of school failure. This report details previous findings from the longitudinal study of two cohorts of MSRP children from kindergarten through the primary grades, current findings from the 1998-99 school year, program quality and risk factor data, and the grantee evaluation support project. The program includes a child development component providing age-appropriate activities to promote intellectual and social growth, and a family support and guidance component. Year 3 of the evaluation focused on testing for Cohort 1 MSRP program effects over and above effects of key background variables. Findings indicated that after controlling for site differences, participants' characteristics, and socioeconomic status, MSRP students remained significantly higher in overall development in kindergarten and received higher ratings on some aspects of school readiness, compared to non-MSRP students. The Cohort 1 MSRP students had a lower grade retention rate than the comparison group by the end of Grade 2. Site variability in program effects suggested a need for further development in curriculum, instructional staff, and philosophy. Also, MSRP program quality was generally high, although lower quality was found related to organizational and instructional issues and lack of outdoor play space. The rate and prevalence of child risk factors have been quite stable. A Grantee Evaluation Support Project (GESP) provides training workshops, custom support activities, and print materials to improve local programs. Findings regarding the GESP revealed the need for quantitative data to substantiate progress. (Data tables are appended.) (KB)

Reproductions supplied by EDRS are the best that can be made
from the original document.

ED 440 736

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
X This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Points of Light

Third Year Report of the Michigan School Readiness Evaluation

Zongping Xiang | Larry Schweinhart
Charles Hohmann | Charles Smith | Eileen Storer | Sherri Oden

February 28, 2000

PS 028471

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY
LawrenceJ Schweinhart
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

HIGH/SCOPE
Educational Research Foundation

BEST COPY AVAILABLE

Points of Light:

Third Year Report of the Michigan School Readiness Program Evaluation

Report Authors

*****

Zongping Xiang
Larry Schweinhart
Charles Hohmann
Charles Smith
Eileen Storer

High/Scope Educational Research Foundation

February 28, 2000

Table of Contents

Executive Summary i

Part 1 -- State Longitudinal Study ..... 1 – 1
Overview ..... 1 – 1
What is the Michigan School Readiness Program? ..... 1 – 1
Research Questions and Research Design ..... 1 – 1
Research Questions ..... 1 – 1
Study Participants ..... 1 – 2
Measures and Data Collection ..... 1 – 8
Data Analyses ..... 1 – 9
Previous Findings ..... 1 – 9
High Program Quality was Found for Both Cohorts ..... 1 – 9
Analyses without Background Adjustment Revealed Significant Child Outcomes for the MSRP Groups ..... 1 – 9
Current Status of the Study ..... 1 – 10
Data Collection for the 1998-1999 School Year ..... 1 – 11
Status of Study Participants ..... 1 – 11
Achieving a Higher Rate of Study Participation ..... 1 – 11
Estimating MSRP Effects Using a Comprehensive Analysis Approach ..... 1 – 12
Key Covariates Selected ..... 1 – 13
Key Outcome Variables Selected ..... 1 – 15
Statistical Approach ..... 1 – 15
Status of Comprehensive Analysis ..... 1 – 15
Current Findings ..... 1 – 17
Overall Effects for the MSRP ..... 1 – 17
COR Findings ..... 1 – 17
SRRS Findings ..... 1 – 20
Grade Retention Findings ..... 1 – 22
MSRP Program Effects across Study Sites ..... 1 – 22
Program Effects were Found at Some Sites But Not Others ..... 1 – 22
Potential Causes for Program-by-Site Effects ..... 1 – 23
Summary of the Major Findings ..... 1 – 28
Data Collection Plan for the Next Two Years ..... 1 – 29
Plan for 1999-2000 ..... 1 – 29
Plan for 2000-2001 ..... 1 – 29

Part 2 – Statewide Data for Program Quality and Risk Factors ..... 2 – 1
Overview of the Program Quality Assessment ..... 2 – 1
Analysis of the Statewide 1998-99 Program Quality Data ..... 2 – 1
Low Scoring Items ..... 2 – 2

Risk Factor Data from the MSRP Statewide Evaluation . . . . . 2 – 3
Analysis of the Statewide 1998-99 Risk Factor Data . . . . . 2 – 4
Prevalence *of Risk Factors* . . . . . 2 – 5
Risk Factor Incidence . . . . . 2 – 6
Levels of Risk: High and Low . . . . . 2 – 6

Part 3 – Grantee Evaluation Support Project . . . . . 3 – 1
Summary of the Grantee Evaluation Support Project . . . . . 3 – 1
Goals and Plan of the MSRP Grantee Evaluation Support Project . . . . . 3 – 1
Training and Support Activities of the Grantee Evaluation Support Project . . 3 – 2
Linking Assessment to School Improvement . . . . . 3 – 2
Focusing on Low-Stakes, Program Improvement Evaluation . . . . . 3 – 4
Two Tiers of Training . . . . . 3 – 4
Training Activities of the Grantee Evaluation Support Project . . . . . 3 – 4
Summary of GESP Training Participation . . . . . 3 – 7
Training Coverage . . . . . 3 – 7
Characteristics of GESP Training Participants . . . . . 3 – 8
Program Characteristics Related to Assessment and Evaluation . . . . . 3 – 8
Training Impact . . . . . 3 – 9
Monitoring the Need for Evaluation Support to MSRP Grantees . . . . . 3 – 9
Analysis of the Narrative Summary Form as an Indicator of Evaluation Capacity . . . . . 3 – 10
Comprehensive Child Assessment . . . . . 3 – 11
From Child Assessment to Outcome Evaluation . . . . . 3 – 12
Evaluation Capacity and LEA Organization . . . . . 3 – 13

MSRP Program Evaluation – Part 1 Appendix Tables . . . . . A – 1

List of Tables

Table 1.1. Cohort 1 Identified Sample Size by Group and Site . . . . . 1 – 4
Table 1.2. Cohort 2 Identified Sample Size by Group and Site . . . . . 1 – 4
Table 1.3. Cohort 1 Family Demographics by Study Group . . . . . 1 – 5
Table 1.4. Cohort 2 Family Demographics by Study Group . . . . . 1 – 6
Table 1.5. Previous Findings (without Background Adjustment) . . . . . 1 – 10
Table 1.6. Number of Study Participants by Type of Data and Grade . . . . . 1 – 11
Table 1.7. Key Variables Selected for Comprehensive Analysis of MSRP Effects (1998-1999) . . . . . 1 – 13
Table 1.8. Cohort 1: Sample Size for Comprehensive Analysis by Outcome Variable . . . . . 1 – 16
Table 1.9. Cohort 2 : Sample Size by Type of Data . . . . . 1 – 16
Table 1.10. Cohort 1 Kindergarten (Kg.): Analysis of Covariance for Child Overall Development on the COR . . . . . 1 – 19
Table 1.11. Cohort 1 Kg. / Gr.1 / Gr.2: Analysis of Covariance for School Readiness Overall on SRRS . . . . . 1 – 20
Table 1.12. Cohort 1 Gr.2: MSRP vs. Comparison Group in Grade Retention Rate . . . . . 1 – 22
Table 1.13. Cohort 1: Distribution of Total Number of Risk Factors by Study Site . . . . . 1 – 24
Table 1.14. Cohort 1 Kindergarten (Kg.): Analysis of Covariance for MSRP Participants' Overall Development with COR-Related Risk Factors . . . . . 1 – 25
Table 1.15. Cohort 1: Average Number of COR-Related Risk Factors in Six Study Sites . . 1 – 25
Table 2.1. 1998-99 Program Quality Scores by Quartiles: Classroom Level . . . . . 2 – 1
Table 2.2. Program Quality Assessment Scores by Quartile: Program Level . . . . . 2 – 2
Table 2.3. PQA Items on Which Over 10% of Classrooms Score 3 or Less . . . . . 2 – 4
Table 2.4. Percentage of Children Experiencing Certain Risk Factors (1996 and 1998 MSRP data) . . . . . 2 – 5
Table 2.5. Risk Factor Levels . . . . . 2 – 6
Table 2.6. Top 10 Risk Factors by Level of Risk (1998 MSRP data) . . . . . 2 – 7
Table 3.1. GESP Trainings Delivered by Workshop Type . . . . . 3 – 7
Table 3.2. Trainings Delivered vs. Potential Demand . . . . . 3 – 7
Table 3.3. GESP Workshop Participants by Agency . . . . . 3 – 8
Table 3.4. GESP Workshop Participants by Job Title . . . . . 3 – 8
Table 3.5. GESP Workshop Participants by Education Level . . . . . 3 – 9
Table 3.6. Impact of the MSRP Evaluation Workshop Series on the MSRP Workforce . . . . 3 – 9
Appendix Table 1. Cohort 1 Kindergarten (Kg.): COR Total Scores by Group and Site Controlled for Key Covariates . . . . . A – 2
Appendix Table 2. Cohort 1 Kindergarten: Analysis of Covariance for COR Total Scores and Subscale Scores . . . . . A – 3
Appendix Table 3. Cohort 1 Kg.: SRRS Total Scores by Group and Site Controlled for Key Covariates . . . . . A – 4
Appendix Table 4. Cohort 1 Gr.1: SRRS Total Scores by Group and Site Controlled for Key Covariates . . . . . A – 4
Appendix Table 5. Cohort 1 Gr.2: SRRS Total Scores by Group and Site Controlled for Key Covariates . . . . . A – 5

Appendix Table 6. Cohort 1 Kg. / Gr.1 / Gr.2: SRRS Item Scores for Program Effects Controlled for Key Covariates ..... A – 5
Appendix Table 7. Cohort 1 Kg.: COR Subscale Scores by Group and Site Controlled for Key Covariates ..... A – 6
Appendix Table 8. Statewide Risk Factor Data 1996: Distribution of Total Number of Risk Factors by Site ..... A – 7
Appendix Table 9. Cohort 1 PreKg.: Total Scores for Program Quality Assessment (PQA) by Study Site ..... A – 7

List of Figures

1. Cohort 1 & 2 MSRP vs. All MSRP for Risk Factors ..... 1 - 7
2. Cohort 1: COR Scores by Group ..... 1 - 17
3. Cohort 1: MSRP vs. Comparison for SRRS Item Scores ..... 1 - 20
4. Cohort 1 Kg: MSRP vs. Comparison in COR Overall Development by Site ..... 1 - 22
5. Cohort 1: Overall Program Quality on the PQA by Site ..... 1 - 25
6. Cohort 1: Site A vs. All other Sites for PQA Total & Subscale ..... 1 - 26
3 - 1. Evaluation Within Local Programs ..... 3 - 3
3 - 2. Child Outcomes Measures: MSRP 1998-99 ..... 3 - 11
3 - 3. Evaluation Report Characteristics: MDE Narrative Summary Form 1998-99 ..... 3 - 12
3 - 4. Longitudinal Reporting Characteristics: MDE Narrative Summary Form 1998-99 ..... 3 - 13
3 - 5. Who Completes the MDE Narrative Summary Form 1998-99 ..... 3 - 14

Executive Summary

Every day, more than 20,000 four-year-old children attend the Michigan School Readiness Program (MSRP) in 470 public school districts and 66 other agencies across the state. The MSRP is one of the 31 state-initiated and -funded preschool programs in the U.S. that are designed to help poor or other children at risk of school failure start school ready to learn. Is the Michigan program achieving this goal? In order to answer this question, the Michigan State Board of Education awarded a grant to the High/Scope Educational Research Foundation beginning in 1995 to design and conduct an evaluation to assess the implementation and effectiveness of the Michigan School Readiness Program. The program had not been evaluated since its inception in 1985.

For the last three years, the MSRP Evaluation's Longitudinal Study has followed two cohorts of children from kindergarten through the primary grades. The two cohorts were selected in seven sites from across the state. Each cohort consists of a group of children who had participated in the MSRP and a comparison group who are like the MSRP children in age and socioeconomic background, but had not attended the MSRP. Every year since kindergarten, data have been collected on the study participants' developmental outcomes and school readiness; attendance, grade level and special services from school records have been reviewed; and parents have been interviewed concerning their involvement in their child's education.

The results of the first two years' assessment were presented in *Early Returns* and the Semiannual Progress Report of March,1999. The reports presented evidence of these MSRP effects:

- For Cohort 1 participants (who were in kindergarten in the first study year and Grade 1 in the second study year), in their *kindergarten* year, outside observers rated the MSRP group significantly more advanced in *initiative, social relations, creative representation, music and movement, language and literacy* and *overall development* than its comparison group. Teachers also rated the MSRP children significantly higher overall on the School Readiness Rating Scale than the comparison children. In *Grade 1*, teachers rated the MSRP group significantly higher than its comparison group on several items of the School Readiness Rating Scale.

- For Cohort 2 participants (who were in kindergarten in the second study year), teachers rated the students who had attended the MSRP as significantly more developmentally ready for learning overall and in several major areas than the students who had not attended the program.

Because not enough of the participants' background information had been collected, such factors were not taken into consideration in the assessment of the program outcomes noted above. Having supplemented part of the missing data in the participants' background, the third-year study focused on testing for the Cohort 1 MSRP program effects over and above the effects of key background variables. After statistically controlling for the study site differences and the participants' characteristics (e.g., *age, gender*) and socioeconomic status (e.g., *parental level of education, father at home or not, household income, household size*), the new comprehensive analysis *confirmed the following previously found program effects at kindergarten and found new program effects* through the second grade as follows:

- The students who had participated in the MSRP remained significantly higher in overall development on the Child Observation Record and 5 out of the 6 subscale scores in kindergarten, compared to the students who had not participated in the program.

- The students who had participated in the MSRP had significantly higher ratings on some items (e.g., *ready to learn, retaining learning, good attendance, interest in school work*) of the School Readiness Rating Scale from kindergarten through Grade 2 than the students who had not participated in the program.

Preliminary analysis in this year also found:

- The Cohort 1 MSRP group had a significantly lower grade retention rate than the comparison group by the end of Grade 2 (8% versus 15%).

These results indicate an overall desirable MSRP effect on child development and readiness for school participation.

The comprehensive analysis also revealed significant variation in program effects across the study sites: MSRP effects were found in some sites, but not in others. While examining many possible methodological reasons to explain the program-by-site effects, the significant differences in the program quality across the six study sites suggest a need for further development of the MSRP at some sites, especially in curriculum, instructional staff, and philosophy. Besides, an analysis of risk-factor effects on the MSRP children's developmental outcomes indicated that MSRP children who had more risk factors had lower COR scores, which suggests the importance of taking the risk factors into account in the future study design.

MSRP program quality, reported for each classroom each year using the *Program Quality Assessment* instrument is quite high for programs overall – between 4 and 5 on the 5-point PQA scale. Low-scoring PQA items (3 or below) cluster around organizational issues (e.g. professional affiliation and continuity of trainer), lack of outdoor play space, and instructional issues such as use of small-group instruction and use of planning and recall with children's self-selected activities.

Risk factors – family background and environmental conditions that put children at risk of school failure – are tabulated and reported by MSRP program staff each year for entering children. *Low Family Income* and *Single Parent* are the most frequently cited of the 25 risk

BEST COPY AVAILABLE

factors. On average, slightly more than four risk factors are reported for each MSRP child. Both the prevalence and rate of incidence of risk factors have been quite stable over the two program years 1996-97 and 1997-98.

In 1998 with funding from the W. K. Kellogg Foundation and the Michigan Department of Education, High/Scope launched the Grantee Evaluation Support Project (GESP) to help local MSRP projects use evaluation results to support the quality of their programs. Now in its second year, the three-year GESP reaches out to local programs with training workshops, custom support activities, and print materials designed to enhance the capacity of local programs to carry out their local program evaluations.

The 1999-2000 GESP training program includes seven one- and two-day workshops (up from three the first year) on topics ranging from preschool program evaluation design to individual evaluation consultations. To date, GESP training activities have been conducted in 50 of the 57 state ISDs, whose cooperation was sought in setting up the project. In its first year and a half, the GESP has provided evaluation training to over 1680 early childhood staff in over 70 workshops and conferences statewide. This means that GESP training has reached approximately 50% of the MSRP workforce.

In addition to participants' workshop evaluations, the impact of the GESP is monitored in the Narrative Summary Reports submitted each year by MSRP programs to their state project officers. A content analysis of early reports (prior to the GESP) indicates that less than a third of MSRP program have been using a child outcome measure capable of demonstrating reliable gains for children involved in the program. In these same reports, barely 10% of MSRP program used this or other quantitative data to substantiate progress toward the goals of their local

programs. These findings demonstrate the broad need for enhancing local evaluation capacity. There is anecdotal evidence that GESP training is having an impact on the quality of local program evaluations and we plan to continue the analysis of Narrative Summary Reports for evidence of this impact as more of the MSRP community has the opportunity to implement the GESP training.

Part 1 -- State Longitudinal Study

The High/Scope Educational Research Foundation was awarded a grant by the Michigan State Board of Education to design and conduct an evaluation of the implementation and effectiveness of the Michigan School Readiness Program. The effectiveness and quality of the program had not been evaluated until the current evaluation study began in 1996. By September 1999, the State Longitudinal Study had *completed its third year*. This annual report begins with a brief review of the previous findings of the study, then presents a summary of its current status and findings and the data collection plan for the next two years.

Overview

In this section we provide a general description of the Michigan School Readiness Program, a brief review of the longitudinal evaluation research questions and design, and then a summary of the findings for the first two years.

What is the Michigan School Readiness Program?

The Michigan School Readiness Program (MSRP) is a preschool program funded and sponsored by the State of Michigan. It provides nine months of educational experiences to four-year-olds identified as being at risk of school failure. Children in the MSRP receive a child development preschool program that provides age-appropriate activities in order to promote their intellectual and social growth and school readiness. Children's families receive parenting support, guidance, and referrals to community service agencies as needed. The MSRP initiative began as a small pilot project in 1985 and has grown steadily in the last decade. During the 1996-1997 school year, the programs operated in 460 of the state's 560 school districts and 66 other agencies throughout the state, serving 21,077 children and their families. By the 1999-2000 school year, the program had served a total of 212,000 children since its inception.

Research Questions and Research Design

Research Questions

The research questions of the MSRP State Longitudinal Study flow from two major intended effects of the program:

- ***Does the program contribute to children's development and readiness for school participation?*** This question focuses on an evaluation of the program effects on the children who participate in the program.

- ***Does the program help parents contribute to children's development and readiness for school participation?*** This question focuses on an evaluation of the program effects on the parents of the participating children.

Study Participants

Study cohorts and sites. The study has two cohorts. Cohort 1 consists of two groups of children—a group who attended MSRP classes in 1995-1996 and a comparison group of same-age children who did not participate in the MSRP. Cohort 2 consists of three groups of children—a group who participated in the 1996-1997 MSRP, a group who participated in Head Start, and a group who did not participate in a preschool program. The study sites were selected from across Michigan (see the map on the next page).

- ***Cohort 1*** children were identified from 6 study sites: Detroit Public Schools in the southeast of the state, COOR Intermediate School District in the north, Muskegon Public Schools in the west, Kalamazoo Public Schools and the Wyoming/Godwin Heights/ Godfrey Lee/Kelloggsville School District Consortium in the southwest, and the Economic Opportunity Committee of St. Clair County in Port Huron in the east of the state.

- ***Cohort 2*** children were identified from 5 study sites: Detroit Public Schools, the COOR Intermediate School District, Muskegon Public Schools, the Wyoming/Godwin Heights/ Godfrey Lee/Kelloggsville School District consortium, and the Downriver Guidance Clinic. (Downriver joined the study, while Kalamazoo and Port Huron dropped out for Cohort 2.)

Identification and selection of study participants. For both Cohorts 1 and 2, potential study participants were first identified as they entered kindergarten. The study comparison children from each cohort were identified based on three criteria:

- They entered kindergarten in the same year as the MSRP children.

- They did *not* have a preschool program experience, although a few had been in child care.

- They came from families whose income was low enough to have qualified them for the MSRP, based on parents' self-reported income on the Child and Family Background Questionnaire.

The primary bases for selection of the children into the study were: (a) the data collected from parents (through a form sent home and subsequent interviews with parents on the telephone); (b) school records; (c) kindergarten teachers' knowledge of prekindergarten

Keweenaw
Houghton
Ontonagon
Baraga
Marquette
Alger
Luce
Chippewa
Gogebic
Iron
Dickinson
Delta
School craft
Mackinac
Menominee
Emmet
Cheboygan
Presque Isle
Charlevoix
Montmorency
Alpena
Antrim
Otsego
Lee Lanau
Kalkaska
Crawford
Oscoda
Alcona
Benzie
Grand Traverse
Iosco
COOR Intermediate School District
Manistee
Wexford
Missaukee
Roscommon
Ogemaw
Arenac
Huron
Mason
Lake
Osceola
Clare
Gladwin
Oceana
Newaygo
Mecosta
Isabella
Midland
Bay
Tuscola
Sanilac
Montcalm
Gratiot
Saginaw
Muskegon
Genesee
Lapeer
St Clair
Port Huron
Kent
Ionia
Clinton
Shiawassee
Oakland
Macomb
Ottawa
Wyoming Consortium
Allegan
Barry
Eaton
Ingham
Livingston
Wayne
Detroit
Van Buren
Kalamazoo
Calhoun
Jackson
Washtenaw
Monroe
Downriver Guidance Clinic
Cass
St Joseph
Branch
Hillsdale
Lenawee
Berrien
Kalamazoo

1 – 3

experience; and (d) risk factor information. In addition, for most sites, federal Free and Reduced Lunch Program eligibility information was obtained to verify children's eligibility for the study. From these available data, children were identified as being in one of the study groups: MSRP or comparison for Cohort 1, and MSRP, comparison, or Head Start for Cohort 2.

Sample size. Tables 1 and 2 present the numbers of participants who were identified as Cohort 1 and Cohort 2, by group and study site.

Table 1.1. Cohort 1 Identified Sample Size by Group and Site

Site	Number of Participants		
	MSRP	Comparison	Total
COOR Intermediate School District	50	49	99
Detroit Public Schools	57	55	112
Kalamazoo Public Schools	53	38	91
Muskegon Public Schools	75	37	112
Wyoming/Godwin/Godfrey/Kelloggsville Public School	51	46	97
Economic Opportunity Committee of St. Clair County	65	47	112
Total	**351**	**272**	**623**

Table 1.2. Cohort 2 Identified Sample Size by Group and Site

Site	Number of Participants			
	MSRP	Comparison	Head Start	Total
COOR Intermediate School District	49	25	42	116
Detroit Public Schools	51	65	55	171
Muskegon Public Schools	71	68	80	219
Wyoming/Godwin/Godfrey/Kelloggsville	37	41	28	106
Downriver Guidance Clinic	6	7	4	17
Total	**214**	**206**	**209**	**629**

Characteristics of study participants. The family background of the participants and incidences of risk factors for the MSRP participants were examined for each cohort. For those study participants with data collected during their kindergarten years, the analyses of the *parental*

level of education, proportions of *households headed by a single parent*, and *household income* indicated no significant differences between the MSRP and the comparison groups for either cohort (see Table 3 and Table 4). However, two significant differences in the background characteristics of the study groups were found. In Cohort 1, the MSRP group had a lower *number of household members* than the comparison group. In Cohort 2,the only difference was between the MSRP and Head Start groups, with Head Start families having a lower average *income*.

Table 1.3. Cohort 1 Family Demographics by Study Group

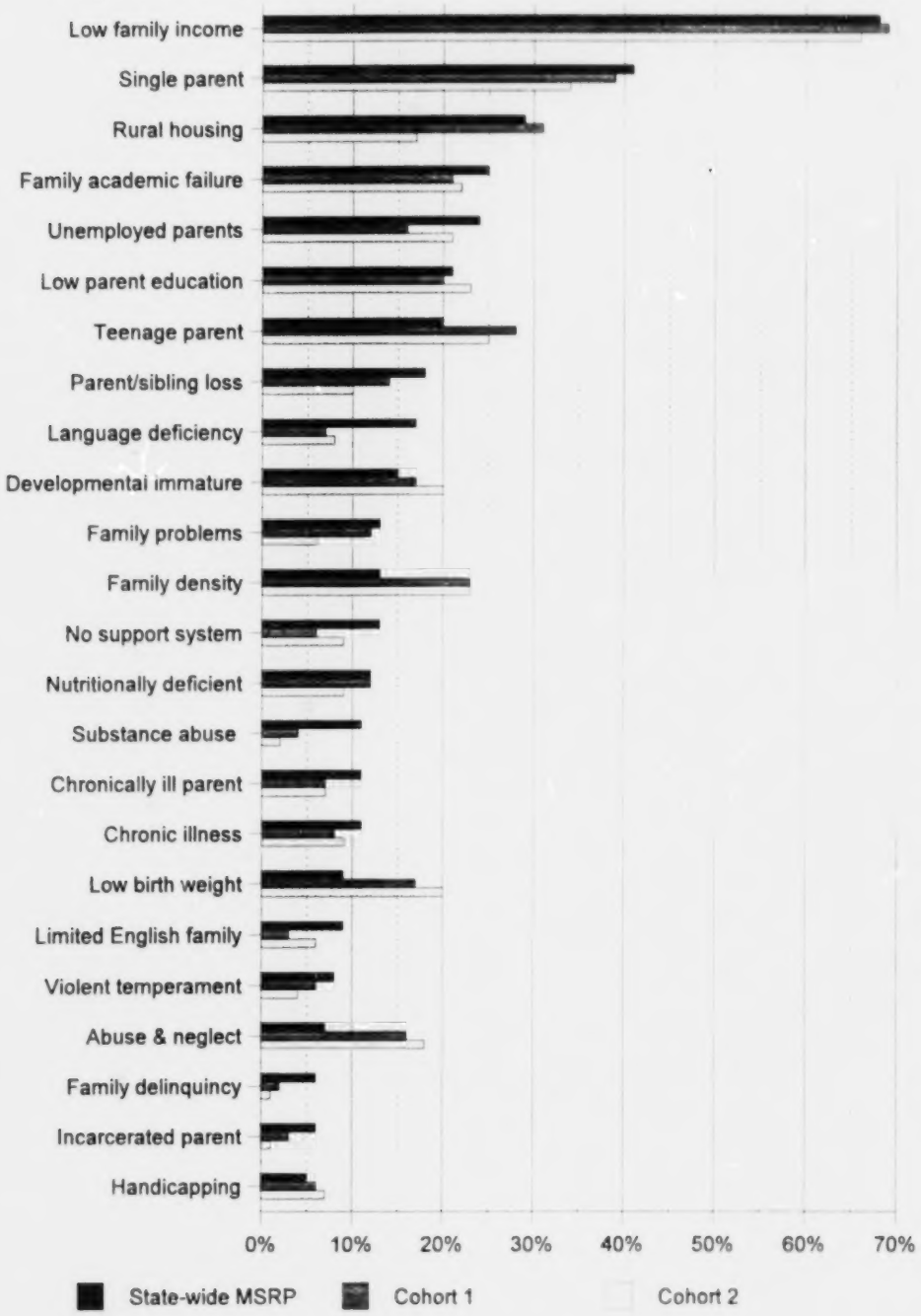
Variable	Group	*n*	Average / Percentage	Statistical Significance of Difference
Mother's highest year of education	***MSRP***	246	12.04	
	Comparison	186	11.94	
Father's highest year of education	***MSRP***	154	12.19	
	Comparison	126	11.79	
Number of people per household	***MSRP***	251	4.46	$p<.05$
	Comparison	194	4.78	
Household annual income	***MSRP***	251	$17,587	
	Comparison	194	$17,195	
% of father in home	***MSRP***	251	61%	
	Comparison	194	60%	

Table 1.4. Cohort 2 Family Demographics by Study Group

Variable	Group	*n*	Average / Percentage	Statistical Significance of Difference
Mother's highest year of education	***MSRP***	157	12.12	
	Comparison	115	11.90	
	Head Start	132	12.10	
Father's highest year of education	***MSRP***	113	12.13	
	Comparison	68	11.60	
	Head Start	84	11.78	
Number of people per household	***MSRP***	162	4.59	
	Comparison	115	4.57	
	Head Start	139	4.43	
Household annual income	***MSRP***	137	$16,898	*MSRP > Head Start* $p<.05$
	Comparison	99	$15,874	
	Head Start	119	$14,778	
% of father in home	***MSRP***	159	69%	
	Comparison	116	57%	
	Head Start	139	59%	

Figure 1 compares the incidence of 24 risk factors for the MSRP groups of Cohorts 1 and 2 versus MSRP children state-wide in 1996. The patterns are similar, with a few exceptions: for both study cohorts, the MSRP groups had a 5 to 10 percentage-point higher incidence than the state-wide MSRP children of the following risk factors: *teenage parents, family density, low birth weight,* and *child abuse and neglect*; and 5 to 10 percentage points lower of *language deficiency* and *substance abuse*. In addition, compared with state-wide MSRP children, Cohort 1 MSRP children had a lower incidence of *unemployed parents* and Cohort 2 MSRP children had a lower percentage of *rural housing*. All of these variations are sufficiently small and few among 24 factors to indicate that the two study cohorts were representative of the state-wide MSRP population.

Figure 1: Cohort 1 & 2 MSRP vs. All MSRP for Risk Factors



Measures and Data Collection

For each cohort, the following data were collected in order to answer the research questions noted above.

Child Outcomes:

- The High/Scope *Child Observation Record* (COR), which measures child development in six areas: *initiative, social relations, creative representation, music and movement, language and literacy,* and *logic and mathematics.* The data were collected in kindergarten by trained outside observers.

- The *School Readiness Rating Scale* (SRRS), formerly the Child Development Rating Scale, which measures child development in school readiness for learning every school year from kindergarten onward. Eleven items were rated in kindergarten, and a few more items have been added to assess the expanding learning and developmental domains as children progress to the higher grades. The ratings were completed by the teachers of the participating children.

- *School Records Review,* which provides information about the special services the children were referred to and used and information about school attendance. It also provides risk factor information for MSRP children. The data were collected every year, usually by school district staff.

Participants' Family Background:

- *The Child and Family Background Questionnaire,* which provides child socioeconomic information and preschool program participation information collected from parents at kindergarten.

Parent Outcomes:

- *The Parent Interview,* which provides information about parent involvement in child-related activities both in school and at home, as well as parents' expectations for their child's schooling. The interview now also includes family background information to follow some of missing data from the initial data collection. The interview was conducted, usually over the phone, by High/Scope staff in the summer of each year from kindergarten onward.

Program Quality:

- *The High/Scope Program Quality Assessment*, which assesses MSRP classrooms in nine areas: *philosophy, population access, curriculum, learning environment, advisory council, parent involvement, funding, administration and supervision*, and *instructional staff*. The assessment was conducted by trained data collectors when the participating children were in the preschool programs.

Data Analyses

Descriptive and comparative analyses were the major statistical approaches employed in the first two years of the evaluation. Children's outcomes were compared each year to test for statistically significant differences between the MSRP and comparison groups in child development and school readiness. Because the number of study participants for which we have family background data was only about two-thirds of the identified samples, neither background characteristics nor socioeconomic status were taken into account in the first two years of data analysis.

Previous Findings

As shown in Table 5, the kindergarten and first-grade findings for Cohort 1 and the kindergarten findings for Cohort 2 were previously reported in *Early Returns* and the Semiannual Progress Reports of March, 1999. The following is a brief summary of the major findings. Not many findings regarding parent outcomes have ever been reported because of the limited amount of Parent Interview data collected each year.

High Program Quality was Found for Both Cohorts

Forty-nine MSRP classrooms were assessed by trained observers for Cohort 1, and 32 were assessed for Cohort 2. The average total scores on the Program Quality Assessment (PQA) for both cohorts ranged in levels between good and excellent. Approximately 50 percent of the assessed programs in both cohorts had high-level PQA total scores (average ratings of 4.50 to 5.00), and no program had a low-level score (1.00 to 2.99).

Analyses without Background Adjustment Revealed Significant Child Outcomes for the MSRP Groups

Cohort 1. In *kindergarten*, observers rated MSRP children significantly higher than the comparison children on COR total scores and on 5 out of the 6 subscale scores: *initiative, social relations, creative representation, music and movement, language and literacy*. In addition, MSRP children received significantly higher ratings from their teachers on *initiative, imaginative and creative use of materials*, and *retaining learning*. Nearly significant trends (p between .05 and .10) were found for *completing assignments* and *ready to learn and participate*. The kindergarten School Readiness Rating Scale total score was significantly higher for the MSRP

group than the comparison group. At *first grade*, MSRP children received significantly higher ratings on *good attendance*, *retaining learning*, and *literacy skills*.

Cohort 2. In *kindergarten*, teachers rated students who had attended the MSRP as significantly more developmentally ready for learning in several major areas: *having good attendance*, *taking responsibility for their own errors or problems*, *retaining learning*, and *being ready to learn and participate in school*. In addition, two nearly significant trends in favor of MSRP children were found for *showing initiative* and *completing assignments*. The kindergarten SRRS total score was significantly higher for Cohort 2 MSRP children than for the comparison group. On the other hand, no difference in COR scores was detected between the MSRP and comparison groups for Cohort 2. This lack of difference is inconclusive, however, because 37% of the COR data were missing and the reliability of the COR for Cohort 2 was very low.

Table 1.5. Previous Findings (without Background Adjustment)

Type of Assessment	Cohort	
	Cohort 1	**Cohort 2**
Program Quality Assessment	High-level: 50%, low level: 0%	High level: 44%, low level: 0%
Child Outcomes	COR total & 5 subscale scores in favor of MSRP	No significant differences on COR
	SRRS total & 5 item scores in favor of MSRP (Kg.) SRRS 3 item scores in favor of MSRP (Gr.1)	SRRS total & 6 item scores in favor of MSRP (Kg.)
Parent Outcomes	Pending	Pending

In summary, the child outcomes strongly favored the MSRP. However, these results must receive further analyses to take into account the participant background information. A comprehensive test for MSRP program effects became the major task of 1998-1999 year's study, as described in the next section.

Current Status of the Study

This section provides a summary description of the Cohort 1 and 2 data collection and analyses from 1998 to the present. In the 1998-1999 school year, Cohort 1 study participants were in second grade, and Cohort 2 participants were in first grade. In 1999-2000, Cohort 1 is in third grade and Cohort 2 is in second grade.

Data Collection for the 1998-1999 School Year

Status of Study Participants

For each study cohort, the study design projected data collection for three types of assessment beyond the kindergarten assessment up to the fourth grade, as feasible. The assessments were the *School Readiness Rating Scale* (completed by the teachers), the *Parent Interview* (conducted by telephone interviewers), and the *School Records Review* (collected by local school staff). Table 6 presents the numbers completed each year by type of data for both cohorts.

Table 1.6. Number of Study Participants by Type of Data and Grade

Type of Data / Grade	Cohort 1 (*n*=623)						Cohort 2 (*n*=629)			
	Kg.		*Gr.1*		*Gr.2*		*Kg.*		*Gr.1*	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%
Family background information	448	72	—		(+69)		425	68	(+17)	
Child Observation Record	464	74	—		—		399	63	—	
School Readiness Rating Scale	499	80	445	71	360	58	349	55	322	51
School records review	513	82	317	51	273	44	438	70	207	33
Parent Interview	179	29	265	43	278	45	255	41	165	26

Note. The percentages are calculated on the basis of the total sample size (623 for Cohort 1, and 629 for Cohort 2). Family Background and COR data were collected only in kindergarten. Numbers in parentheses for the Family background information are the key socioeconomic data derived from the Parent Interview data collection this year. The Family background information is now completed for 517 study participants (82%) for Cohort 1 and 442 study participants for Cohort 2 (70%).

We can see from Table 6 that the data received were not complete even in the first year of the study, and the response rate decreased with each year on the whole. Attrition is likely in any longitudinal study. In our study, the attrition was found to be due to three major reasons: (1) family relocated with no forwarding information; (2) family could not be contacted; or (3) family, teacher or school declined to provide information. These problems have been worsening with the progression of the study despite our many efforts to locate each participant and to collect each possible type of data.

Achieving a Higher Rate of Study Participation

To compensate for the study attrition and still keep a feasible workload, we used several data collection strategies in the 1998-1999 data collection. First, we gave priority in Parent Interview data collection to those study participants whose Child Observation Records (COR) or

School Readiness Rating Scale (SRRS) data from kindergarten had been complete, but whose family background information had not. Second, we gave priority to Cohort 1 over Cohort 2 study participants, because their data have been much more complete. Third, we added family background items to the Parent Interview, thus allowing us to establish the socioeconomic status of a higher proportion of the sample in the assessment of child outcomes when comparing the MSRP group to the no-program group.

Although the Parent Interview has always been the most difficult data to collect, we have completed 278 parent interviews for Cohort 1 this school year, the highest number of this kind ever completed in any of the study years. In particular, we collected family background data from 86 parents for whom we previously had no information. In order to achieve a complete data set for an about 75 percent of the defined sample for Cohort 1 by the fourth grade, we have decided to continue the 1998-1999 year's Parent Interview data collection during the 1999-2000 school year. This strategy acknowledges the three important roles that Parent Interview data collection is now playing: (1) finding the "lost" participants; (2) completing the family background information; and (3) obtaining parent involvement and parent expectation information. In addition, we are working with the school systems to achieve continuity of cooperation in order to facilitate a more complete SRRS and school records data collection for the subsequent school years, which will also help us to collect the missing data from school records for the previous school years.

Estimating MSRP Effects Using a Comprehensive Analysis Approach

The major purpose of the MSRP evaluation is to assess the extent to which the program contributes to children's development and readiness for school participation. In our previous two years of analysis, Cohort 1 MSRP students were found to achieve significantly higher scores than the comparison group students for both the COR and SRRS assessments; and the Cohort 2 MSRP group achieved significantly higher SRRS scores than its comparison group. However, particularly because the study participants had not been randomly assigned to study groups and because there may be other potential bias in the data collection and attrition, it is still necessary to estimate the influence of other factors (e.g., family background, participant and site characteristics) in the analyses of potential MSRP effects.

In the previous presentations of the family background information for the MSRP and comparison groups in the *Early Returns (September 30, 1997)* and the Semiannual Progress Report (March, 1999), we had not found significant group differences in major family background variables. Nevertheless, we could not yet conclude that the differences we found in favor of the MSRP group were attributable to the MSRP for the following reasons: (1) The reported family background information was not complete (30% was not collected); (2) Students with complete family background information did not always have complete outcome assessment data; and (3) Additional, related factors, such as site differences or participant characteristics that may influence outcomes had not yet been taken into account in the analyses. Therefore, in the analyses of MSRP effects in 1998-1999, we focused on taking into account the participants'

socioeconomic situation along with other factors that might have influenced the participants' school readiness and child development outcomes. Table 7 presents the key variables selected for this comprehensive analysis of MSRP effects.

Key Covariates Selected

The key covariates we selected for the families' socioeconomic status were *mother's highest years of education*, *household annual income*, *father living at home or not*, and *number of people in the household*. In numerous research studies, these variables have proved to be strong predictors of children's development. We decided not to include father's education in the analysis because of the low response rate (about one-third of those families with family

Table 1.7. Key Variables Selected for Comprehensive Analysis of MSRP Effects (1998-1999)

Covariates	Outcome Variables
Program status (MSRP vs. Comparison)	Child Observation Record scores (Kg.)
Site (study sites where data were collected)	School Readiness Rating Scale scores (Kg., Gr.1, and Gr.2)
Gender (male vs. female)	
Age (in months)	
Mother's highest years of education	
Father at home (father living at home or not)	
Household size (number of people in the household)	
Household annual income (in dollars)	

background information did not report the father's education). The inclusion of father's education would have greatly reduced the sample size and limited the representativeness of the sample.

For the current analysis, we included only *gender* and *age* as participant characteristics. These two factors have often been found to influence children's academic performance and behavior. In addition, in the High/Scope Perry Preschool study[1] and in the Long-Term Benefits of Head Start Study,[2] program benefits were found to be greater for females. Although *risk factor* information (e.g., low birth weight, low income etc.) would also represent relevant participant characteristics, we do not have this information for the children in the comparison group. Thus, these data were also not a part of the comprehensive analysis for the whole sample.

---

[1]Schweinhart, L. J., Barnes, H. V., & Weikart, D. P. (1993) *Significant benefits: The High/Scope Perry Preschool study through age 27.* Ypsilanti, MI: High/Scope Press

[2]Oden, S., Schweinhart, L. J., & Weikart, D. P. with Marcus, S. M., & Xie, Y. (in press). *Into adulthood: A study of the effects of Head Start.* Ypsilanti, MI: High/Scope Press

Nevertheless, we have included risk factors in a comprehensive analysis of MSRP children only, and we report the results later when we examine program effects at various study sites. Participants' *ethnicity* is another relevant characteristic. Since this variable was not collected at the start of the project, we have included it in the current Parent Interview and will include it in the future analysis when the data collection is complete.

Another key covariate in our analysis is the *study site*. Our basic descriptive analysis showed that there were significant differences in MSRP child outcomes across the study sites. Further analyses to examine how group effects differ by site found that program effects were significant in some sites, but not in the others. We also found that by including the site variable in the analysis, we could explain about 10 percent more of the total variance in child outcomes.

Key Outcome Variables Selected

Child Observation Record scores at kindergarten and *School Readiness Rating Scale scores* from kindergarten through Grade 2 were included in the comprehensive analysis this year. Because the number of study participants with both *grade retention* information and covariate information was limited, *grade retention* was not included as an outcome variable in this year's comprehensive analysis. However, a simple comparison of *grade retention* between the MSRP and comparison groups was conducted. Due to insufficient Parent Interview and School Records Review data, *parent involvement, parent expectations* and *special education services* have not been included for either the comprehensive analysis or other analyses to date. The continuing Parent Interview data collection and the data collection for the school records review in the previous years will help to provide sufficient data to be included in the future analyses.

Statistical Approach

The statistical approach we employed for this comprehensive analysis was the analysis of covariance, essentially analysis of variance within a regression model. This approach provides for an analysis of both continuous and categorical variables within the same overall model. It helps to examine the MSRP effects while estimating the effects of all the other covariates at the same time. The results of the analysis will show whether or not the MSRP has effects on the participants' outcomes (e.g., COR and SRRS scores), while controlling for the potential influence of the other covariates in the model.

Status of Comprehensive Analysis

To date, the analyses of covariance have only been applied to Cohort 1 which has sufficient data on family socioeconomic background. Table 8 presents the Cohort 1 sample size for the comprehensive analysis by outcome variable. Since the comprehensive analysis requires the complete data for each of the covariates, any one missing covariate for a participant will cause the exclusion of that case from the analysis. As a result, the analysis sample size for each of the outcome variables was reduced, ranging between 12 to 22 percent of the total sample across the variables.

As noted above, no comprehensive analysis has yet been conducted for Cohort 2, due to the limited number of study participants who have complete data for both covariates and outcomes (see Table 9). Our continuing Parent Interview data collection will help to supplement the missing data in family background and allow for the more comprehensive analysis for Cohort 2 at a later stage.

Table 1.8. Cohort 1: Sample Size for Comprehensive Analysis by Outcome Variable

Outcome Variables	Sample Size with Some Data		Sample Size for Comprehensive Analysis	
	n	%	*n*	%
Child Observation Record (COR)	464	74%	387	62%
School Readiness Rating Scale (SRRS) Kg.	499	80%	364	58%
School Readiness Rating Scale (SRRS) Gr.1	445	71%	348	56%
School Readiness Rating Scale (SRRS) Gr.2 [a]	360	58%	265	49%

Note. The percentages are calculated on the basis of the total identified sample size of 623.
[a] 39 participants (6%) were not included in the second grade analysis because they were retained in first grade. Taking the grade retention rate into consideration, the resulting analysis sample size is about 49% of the total sample of second grade participants.

Table 1.9. Cohort 2 : Sample Size by Type of Data

Grade	Sample / Type of Data	*n*	% of Identified Sample
Kg.	Identified sample size	629	100%
	Number of participants with data (Study sample size)	579	92%
	Number of participants with COR	399	63%
	Number of participants with SRRS (Kg)	349	55%
	Number of participants with both COR and family background information[a]	288	43%
	Number of participants with both SRRS and family background information[a]	271	46%
Gr.1	Number of participants with SRRS (Gr.1)	322	51%
	Number of participants with SRRS (Gr.1) and family background information	260	41%

Note. [a]Total number of Family background forms completed is 442, when we include the supplementary data obtained during the fall of 1999.

Current Findings

We next present the major findings from the comprehensive data analysis (described in the previous section), which takes the covariates into account in assessing child outcomes for Cohort 1. The outcome variables are Child Observation Record scores (COR kindergarten) and the teachers' ratings for the School Readiness Rating Scale scores (SRRS kindergarten, Grade1 and Grade 2). We will also report the preliminary results for Cohort 1's grade retention rate, when most of the students were in Grade 2.

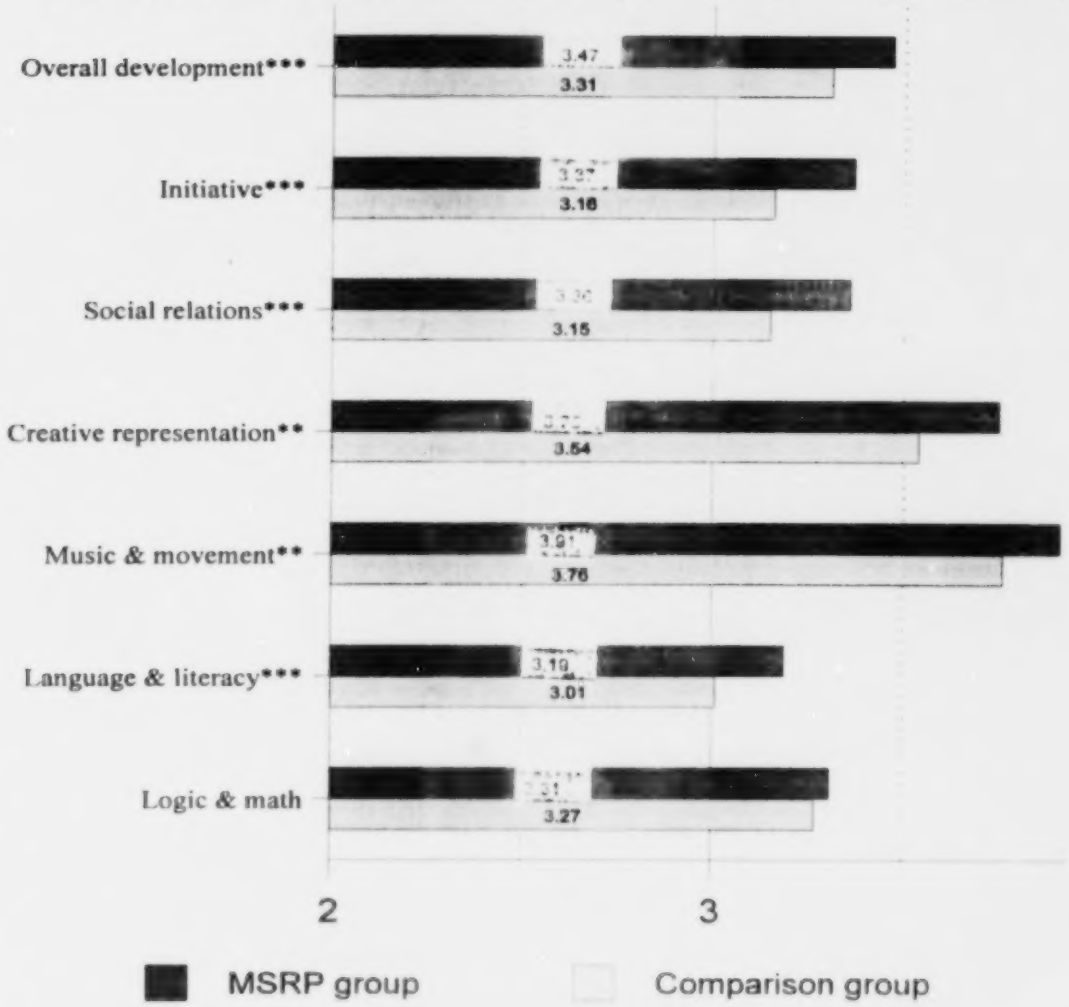
Overall Effects for the MSRP

The main evaluation question for the comprehensive analysis is: ***Does the MSRP show effects on child development and school readiness, after we statistically control for the other covariates such as participants' characteristics, family background, and site differences?*** The following findings provide some answers to this question. They are presented for each type of outcome assessment. A finding is considered to be statistically significant if its probability of chance occurrence is less than .05 ($p<.05$).

COR Findings

Students who had participated in the MSRP had significantly higher level of development on the Child Observation Record (COR) in kindergarten than students who had not participated in the program. After statistically controlling for the other covariates, the results of the comprehensive data analysis found that the MSRP group remained significantly higher than the comparison group in overall development on the COR. The means and significance levels are provided in Figure 2. This effect was also found for 5 out of the 6 COR subscale scores: *initiative, social relations, creative representation, music and movement* and *language and literacy*, but not for *logic and mathematics*.

Figure 2. Cohort 1: COR Scores by Group (controlled for key covariates)



Note. ***= $p < .001$; **= $p < .01$

BEST COPY AVAILABLE

Table 10 provides a simplified description of the effects of each key covariate on child overall development (the COR total scores) in the comprehensive analysis.

Table 1.10. Cohort 1 Kindergarten (Kg.): Analysis of Covariance for Child Overall Development on the COR

Covariate	Variable Description	Evidence of Significant Effects on Child Overall Development
Program	MSRP vs. Comparison	Yes ($p<.001$)
Site	Five Sites where COR data were collected	Yes ($p<.001$)
Program by Site	Compares program effects by site	Yes ($p<.001$)
Gender	Male vs. female	Yes ($p<.05$)
Program by Gender	Compares program effects by gender	No
Age	Age in months	No
Mother's education	Highest years of education completed	No
Father at home	Father living in home vs. not living in home	No
Household size	Number of people in the household	No

Note. The total sample size (N) for the analysis was 387. The amount of variance explained in the analysis (R^2) was 20% .

In addition to whether or not study participants had attended the MSRP (the *program* effect), *site* and *gender* were each found to have significant effects on children's overall development on the COR. A significant effect was also detected for the interaction of *program by site* on child overall development on the COR, which means that the MSRP program effects differed from site to site (see Appendix Table 1). The *program-by-site* effect is discussed in greater detail later in this report.

Age and *family background* variables selected for the analysis were found not to have any significant effect on children's overall development on the COR. Here, *household income* was not included in the analysis because it did not show any effect on COR scores and would have reduced the explained variance by 2 to 3 percent. However, the *family background* variables showed statistically significant or nearly significant effects on *language and literacy*, *social relations*, and *music and movement*; and *age* showed significant effects on *the initiative* and *logic and mathematics* COR subscale scores (see Appendix Table 2).

SRRS Findings

Students who had participated in the MSRP were not significantly higher in school readiness overall on the SRRS, but were significantly higher in some areas of school readiness from kindergarten through Grade 2 than students who had not participated in the program. Table 11 provides the results of the analysis of covariance for child school readiness overall (SRRS total scores) in kindergarten, Grade 1, and Grade 2. For child school readiness overall on the SRRS, although the pattern of the means was higher for the MSRP versus the comparison group, *program* effects were not found to be significant in any of the three years (see Appendix Tables 3, 4, 5). The covariates that found consistent significant effects on child school readiness overall across the years were *household income* and *gender* (higher income and female study participants received higher scores). There were also significant *site* effects on school readiness overall in kindergarten and again in Grade 2. Although *age* effects were detected in kindergarten, the effects decreased in the following years.

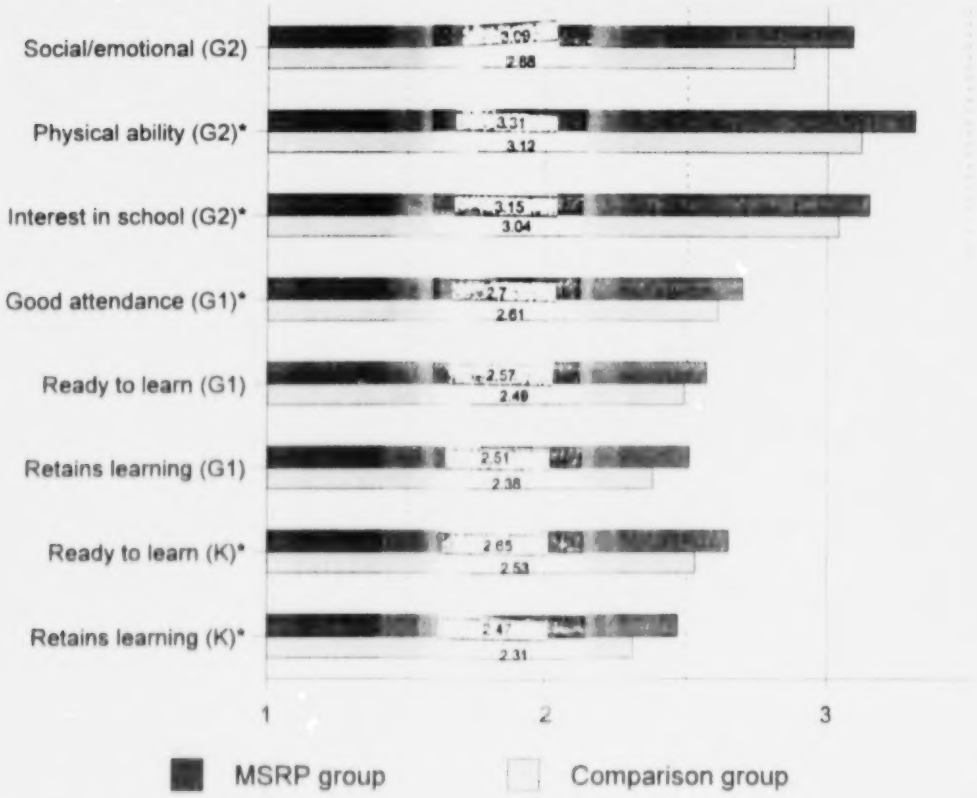
Table 1.11. Cohort 1 Kg. / Gr.1 / Gr.2: Analysis of Covariance for School Readiness Overall on SRRS

Covariate	Variable Description	Evidence of Significant Effects[a] on School Readiness Overall		
		Kg (n=364)	Gr.1 (n=348)	Gr.2 (n=265)
Program	MSRP vs. Comparison	—	—	—
Site	Sites where SRRS data were collected	Yes	—	Yes
Program by Site	Compares program effects by site	Trend	—	—
Gender	Male vs. female	Yes	Yes	Yes
Program by Gender	Compares program effects by gender	—	—	—
Age	Age in months	Yes	Trend	—
Mother's education	Years of education that mothers completed	—	—	Trend
Father at home	Father living in home vs. not in home	—	—	—
Household size	Number of people in the household	Yes	—	—
Income	Household income per year	Yes	Yes	Yes

Note. [a] Significant effects are $p<05$; trends=nearly significant effects: $.10 > p > .05$. For the Kindergarten (Kg.) analysis, the amount of variance explained (R^2) was 26%. For the Grade 1(Gr.1) analysis, $R^2 = 20\%$. For the Grade 2 (Gr.2) analysis, $R^2 = 20\%$.

Despite the lack of program-effect findings for child school readiness overall on the SRRS, the analysis did find *program* effects in favor of MSRP on some areas of school readiness. As shown in Figure 3, *kindergarten* teachers rated MSRP students significantly higher than the comparison group on *retaining learning* and *ready to learn* (the most direct way to define school readiness); *Grade 1* teachers rated MSRP students significantly higher in *good attendance*; *Grade 2* teachers rated MSRP students significantly higher in *interest in school work* and *physical abilities*. In addition, nearly significant trends in favor of the MSRP group were found in *retaining learning* and *ready to learn* in Grade 1 and *social and emotional development* in Grade 2 (see also Appendix Table 6).

Figure 3. Cohort 1: MSRP vs Comparison for SRRS Item Scores



BEST COPY AVAILABLE

Note. * = $p<.05$

Grade Retention Findings

Students who had participated in the MSRP had a significantly lower rate of grade retention than students who had not participated in the program. In addition to COR and SRRS from kindergarten through Grade 2, another important outcome variable is *grade retention*. As noted earlier, a preliminary analysis of this variable, without statistical adjustment for the covariates, was conducted. The chi-square analysis for grade information collected this year showed that the MSRP group had a significantly lower rate of grade retention than the comparison group for Cohort 1. As shown in Table 12, the percentage of grade retention for the MSRP group was 8 percent, compared with 15 percent for the comparison group.

Table 1.12. Cohort 1 Gr.2: MSRP vs. Comparison Group in Grade Retention Rate

Group	Retained		Not Retained		Total	Statistical Significance
	n	%	*n*	%		
MSRP	17	8%	195	92%	212	$p < .05$
Comparison	24	15%	134	85%	158	
Total	41	11%	329	89%	372	

Note. All the 41 retained students were in first grade in the 1998-1999 school year

MSRP Program Effects across Study Sites

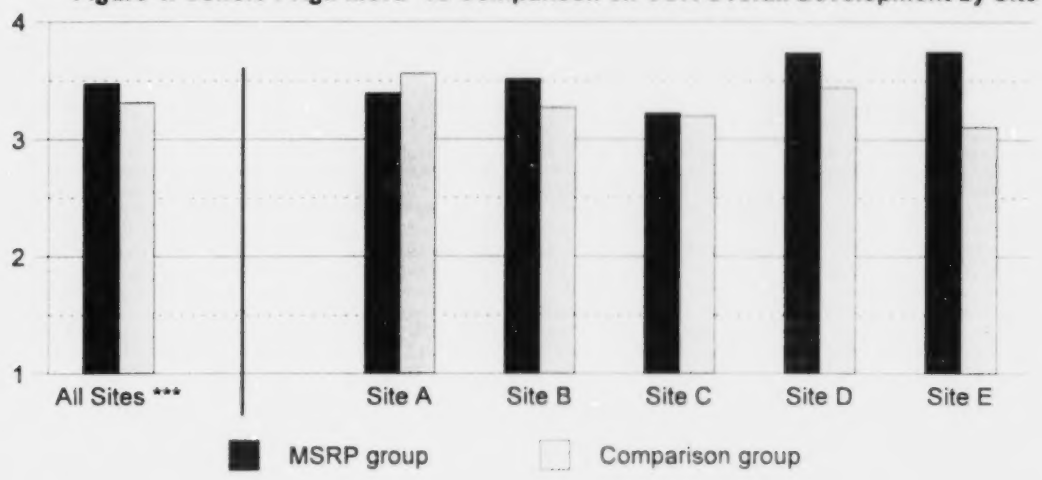
Program Effects were Found at Some Sites But Not Others

Although overall MSRP program effects were found from kindergarten through Grade 2 for Cohort 1, program effects were not found at every study site. This is indicated by the significant interaction effects of *program by site*. To better understand *program-by-site* effects, we descriptively compared children's overall development on the COR at each site (see Figure 4).

Figure 4 gives a general view of how MSRP program effects differed in the sites where the COR data were available. In Sites B, D and E, the MSRP groups achieved significantly higher overall development on the COR than their comparison groups. In Site C, children's overall development for the two study groups were about the same. In Site A, the scores were in favor of the comparison group, although not to a statistically significant extent. *Program-by-site* effects were also found on every COR subscale score (see Appendix Table 7).

Program-by-site effects for child school readiness overall on the SRRS are not as strong as for child overall development on the COR, only nearly significant trends for *program-by-site* effects were found in kindergarten (see Appendix Tables 3, 4, 5).

Figure 4. Cohort 1 Kg.: MSRP vs Comparison on COR Overall Development by Site



Note. ***= $p<.001$. The analysis of covariance found statistically significant effects for *program* ($p<.001$), *site* ($p<.001$) and *program by site* ($p<.001$) on COR Total scores.

Potential Causes for Program-by-Site Effects

The results regarding program-by-site effects indicate that program effects varied from site to site. There may be many reasons for site differences in program effects, such as differences in the comparability of the two groups in some sites; the sensitivity of certain populations to the program effects; the sensitivity of the measures used for the program effects; differences in the administration of the data collection; or differences in the quality of the MSRP classrooms at different study sites. To date, two sets of analyses have been conducted to examine the potential contribution of risk factors and program quality to these program-by-site effects, as described next.

The role of risk factors. For the first of these analyses, we compared the total number of risk factors per child for the 296 MSRP children from our longitudinal study sample across the 6 study sites. As shown in Table 13, the percentage of MSRP children with 5 or more risk factors at Site C (where the MSRP group and comparison group averaged the same in overall development on the COR) was much higher than those at the other sites, 52 percent versus 4 to 34 percent. The analysis of statewide risk factor information for 2,324 MSRP children across the 6 sites in the same year confirmed the fact that the MSRP children enrolled in Site C had more risk factors than in the other 5 sites. (See Appendix Table 8.)

Table 1.13. Cohort 1: Distribution of Total Number of Risk Factors by Study Site

Site	Total Number of Risk Factors								Total Number of children
	1-2		3		4		5 or more		
	n	%	*n*	%	*n*	%	*n*	%	
Site A	5	16%	7	22%	9	28%	11	34%	32
Site B	13	23%	18	32%	11	19%	15	26%	57
Site C	7	11%	10	15%	14	22%	34	52%	65
Site D	7	13%	15	28%	16	30%	15	28%	53
Site E	36	49%	23	31%	12	16%	3	4%	74
Site F	7	47%	5	33%	1	7%	2	13%	15
Total	75	25%	78	26%	63	21%	80	27%	296

Note. Chi-square analysis found a significant difference in *number of risk factors* across the 6 study sites, $p<.001$

The analysis of covariance was then employed in order to examine the potential contribution of the *number of risk factors* on MSRP children's overall development on the COR, while controlling for the potential influence of other covariates, such as *site*, *gender*, *age* and *family background* variables. For this analysis, only 10 risk factors that had been found to be significantly correlated with COR total scores (at $p<.05$) were selected to qualify for the *number of risk factors*. Table 14 shows that *site* as well as *number of COR-related risk factors* had significant effects on MSRP children's overall development on the COR when adjusting for other covariates. These results show that MSRP children who had more of the identified key risk factors also had lower overall development on the COR.

Table 1.14. Cohort 1 Kindergarten (Kg.): Analysis of Covariance for MSRP Participants' Overall Development with COR-Related Risk Factors

Covariates	Variable Description	Evidence of Significant Effects on Child Overall Development
Site	Five sites where COR data were collected	Yes ($p<.001$)
Number of risk factors	Number of COR-related risk factors	Yes ($p<.001$)
Gender	Male vs. female	No
Age	Age in months	No
Mother's education	Highest years of education completed	No
Father at home	Father living in home vs. not living in home	No
Household size	Number of people in the household	No

Note. The total sample size for the analysis was 196. The amount of variance explained (R^2) was 21% .

Table 15 lists the average number of COR-related risk factors across the 6 study sites. The analysis of variance found statistically significant differences in the numbers of COR-related risk factors across the six study sites. The average number of COR-related risk factors was the highest at Site C (mean=2.11).

Table 1.15. Cohort 1: Average Number of COR-Related Risk Factors in Six Study Sites

Site	n	Mean	Standard deviation	Statistical significance
Site A	32	1.56	1.22	
Site B	57	1.91	1.07	
Site C	65	2.11	1.59	$p<.001$
Site D	53	1.06	1.08	
Site E	74	.49	.60	
Site F	15	1.00	.76	
Total	296	1.36	1.28	

Note. Chi-square analysis found a significant difference in *number of COR-related risk factors* across the 6 study sites, $p<.001$

In summary, the first set of analyses showed that there were significant differences in the numbers of risk factors for the MSRP children at the 6 study sites. Both the total number of risk

factors and number of COR-related risk factors were much higher for Site C (where no apparent MSRP effects were found) than for the other 5 sites. Having more risk factors was found to be related to children having lower overall development on the COR. Thus, the results suggest that the higher number of risk factors for the MSRP children at Site C may explain their low overall development on the COR and lack of apparent program effects. However, this conclusion cannot be definite because the number of risk factors in the comparison group at Site C is unknown. The results also show the importance of controlling for risk factors in the future study design and analysis of program effects.

The role of program quality. The second set of analyses was conducted to examine whether or not program quality may explain some site differences in program effects. For this purpose, a comparison of MSRP Program Quality Assessment (PQA) scores across the six study sites was conducted. The results are presented in Figure 5, which shows that although the overall quality of MSRP classes was quite high, the program quality levels were not the same across the sites. The chi-square analysis found significant differences in PQA total scores across the six study sites (see Appendix Table 9). In Sites B, D and E (where significant program effects in favor of MSRP were found on child development on the COR), the total scores for their PQA were relatively higher than for Site A and Site C, where no program effects were detected.

If we take a further look at the results shown in Figure 6, we find that in Site A (where no program effect was found), the subscale scores for *curriculum, instructional staff,* and *philosophy* were the lowest, compared with the other subscale scores of program quality. These results suggest that program quality may provide an additional explanation for *program-by-site* effects. The results also suggest the importance of further development of the MSRP at some sites.

Figure 5. Cohort 1: Overall Program Quality on the PQA by Site

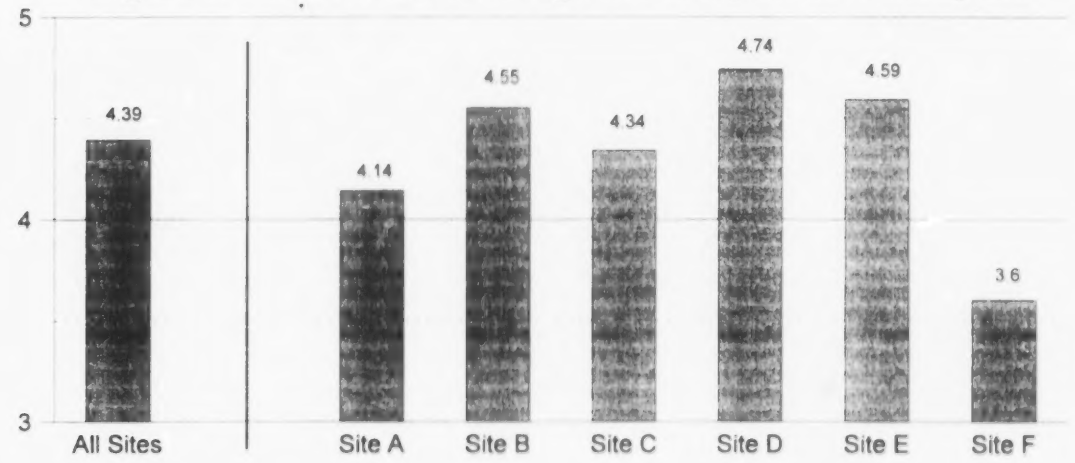
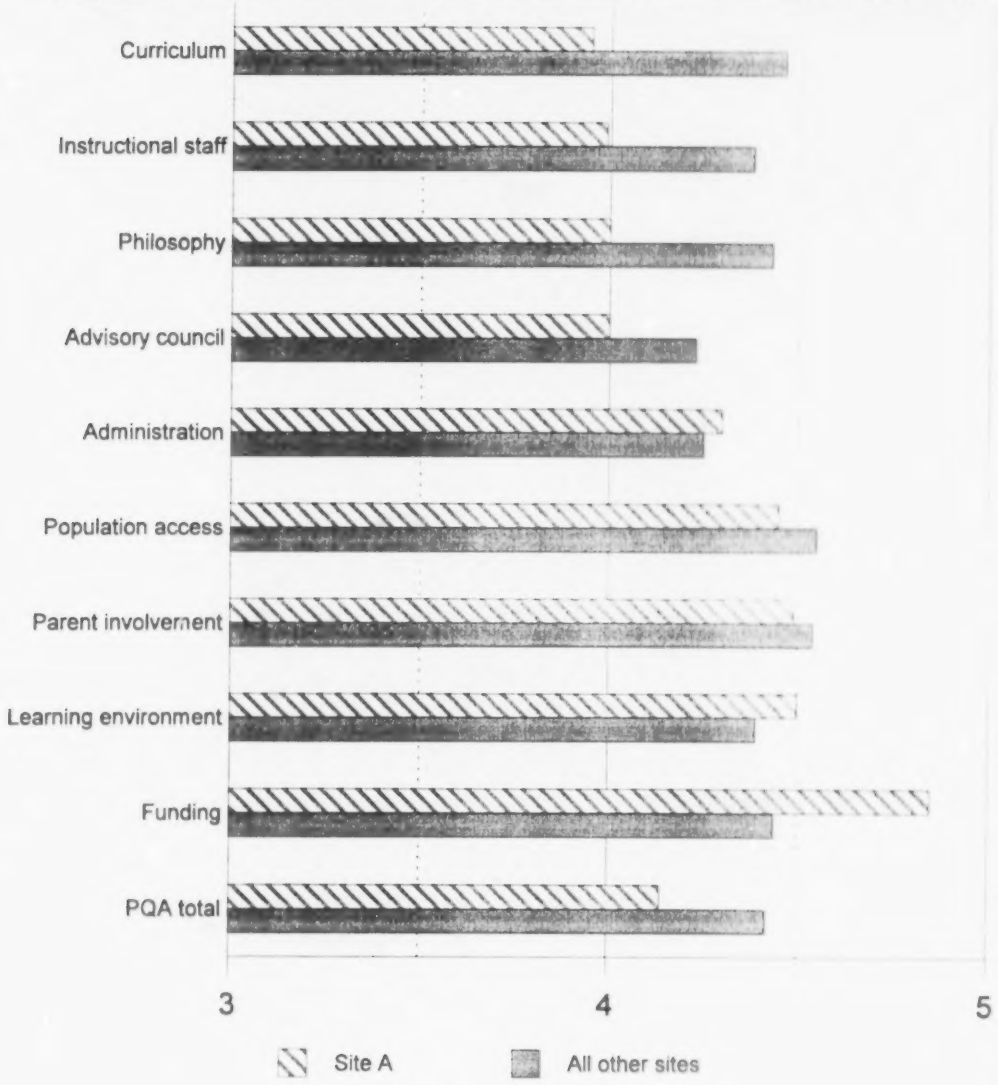


Figure 6. Cohort 1:Site A vs. All other sites for PQA Total & Subscale



Summary of the Major Findings

This year we conducted a comprehensive analysis to test for Cohort 1 MSRP program effects over and above the effects of key background variables. The results of this analysis showed strong program effects for child development on the COR at kindergarten and significant program effects for some areas of school readiness on the SRRS from kindergarten through the second grade. Further, preliminary analysis found that the Cohort 1 MSRP group had a significantly lower grade retention rate than the comparison group (8% versus 15%) by the end of Grade 2. These results indicate an overall program effect on child development and readiness for school participation. However, at the same time, the analysis revealed a significant variation in program effects across the study sites. Thus, program effects were found in some sites, but not in the others. While there are many possible methodological reasons and potential risk factor differences to explain the program-by-site effects, the significant differences in the program quality across the six study sites suggest a need for further development of the MSRP at some sites, especially in curriculum, instructional staff, and philosophy. In addition, an analysis of risk-factor effects on the MSRP children's developmental outcomes indicated that MSRP children who had more risk factors had lower development on the COR, which suggests the importance of taking the risk factors into account if possible, in the future evaluation design.

Data Collection Plan for the Next Two Years

This section presents the data collection plan for the next two years. There are two major innovations: (1) include Michigan Educational Assessment Program (MEAP) scores in Cohort 1's fourth-grade data collection; (2) begin a new cohort in the 2000-2001 school year, in order to continue to capture evidence of recent MSRP effects.

Plan for 1999-2000

In 1999-2000, we are focusing on data collection for Cohort 1 Grade 3 outcomes and completion of the previous years' data in Parent Interview and school records review. The data collection for Cohort 2 will end due to large amount of missing data. The data to be collected are as follows:

Cohort 1

- School Readiness Rating Scale data (Grade 3)
- School records review data (Grade 3), including any missing cases for kindergarten, Grade 1 and Grade 2
- Completion of the Parent Interview data collection for all cases
- Securing permission for MEAP score data collection in Grade 4

Cohort 2

- Completion of the Parent Interview data collection for 40 additional families
- School records review data for all cases (Grade 2)

Plan for 2000-2001

In 2000-2001, a new cohort will be initiated, and Cohort 1's Grade 4 outcomes, including MEAP scores, will be collected. Following are the data to be collected:

Cohort 1

- School Readiness Rating Scale data (Grade 4)
- School records review data (Grade 4)
- MEAP scores (Grade 4)

Cohort 2

No further data collection

Cohort 3 (new cohort)

- PQA data in the MSRP year
- COR data in the MSRP year
- Family Background Questionnaire
- School records review data in the MSRP year
- Parent Interview data in the MSRP year

Part 2 – Statewide Data for Program Quality and Risk Factors

Each year, all MSRP grantees must complete the State-mandated Program Quality Assessment for all classrooms. In addition, each MSRP grantee must provide risk factor data for each child in the program. As part of its MSRP program evaluation responsibility, High/Scope aggregates and analyses two additional statewide data sets concerning Program Quality and Risk Factors. Each data stream and summary findings are described below.

Overview of the Program Quality Assessment

In recent years, research in early childhood education has repeatedly linked improved child-level outcomes to the quality of preschool programs. The Program Quality Assessment (PQA) was designed as practitioner-friendly classroom quality assessment tool for use in the MSRP. It was developed for grantee staff to assess compliance with the Michigan State Board of Education's Standards of Quality and Curriculum Guidelines for Preschool Programs for Four-Year-Olds (1987). The PQA is comprised of 72 items in 7 areas: Learning Environment, Daily Routine, Adult-Child Interaction, Curriculum Planning and Assessment, Parent Involvement and Family Services, Staff Qualifications and Staff Development, Program Management.

Analysis of the Statewide 1998-99 Program Quality Data

The PQA is completed for every MSRP classroom in the state. In 1998-99, PQAs were completed for 940 classrooms across the state. Tables 2.1 and 2.2 provide mean scores and

Table 2.1. 1998-99 Program Quality Scores by Quartiles: Classroom Level

Scores	Learning Environment	Daily Routine	Adult-Child Interaction	Curriculum Planning and Assessment	Parent Involvement and Family Services
Mean	4.49	4.45	4.71	4.30	4.65
75th Percentile	4.78	4.83	5.00	4.80	4.90
50th Percentile	4.55	4.58	4.83	4.40	4.80
25 Percentile	4.22	4.17	4.00	4.00	4.50

scores by quartile across the seven PQA categories. Results are presented in two tables to reflect the division between PQA items that refer to classroom staff level responsibilities and those that rest with program administrators. The basic message in these results is that classrooms across the state demonstrate extremely high quality ratings.

Table 2.2. Program Quality Assessment Scores by Quartile: Program Level

Scores	Staff qualifications and staff Development	Program Management
Mean	4.38	4.56
75th Percentile	4.71	4.82
50th Percentile	4.43	4.64
25th Percentile	4.14	4.36

Low Scoring Items

Despite the high average scores described in the two tables above, PQA results can be disaggregated in such a way as to suggest areas for program improvement such as breaking out individual items on which a large percentage of classrooms scored poorly.[1] In this case a poor score is one of 3 or less. Table 2.3 (See page) presents those PQA items on which 10% or more of statewide classrooms scored a 3 or less.

Several program-level PQA items show particular weakness – professional organization affiliation, ongoing professional development and continuity of trainer. The weakness of these items suggests as professional organizations, MSRP programs could be strengthened. The organizational weakness may be further reflected in the items related to staffing and staff development. Such problems are not uncommon within the early childhood community in general but seem especially pronounced within MSRP.

The lack of outdoor space and outdoor play equipment stands out as a facility-related problem in many MSRP sites and may be a result of housing such programs in locations that were not designed for young children's outdoor activities such as churches and utility spaces. Even public school locations can suffer from the lack of suitable outdoor play space and equipment specifically for preschool children.

The cluster of weak PQA items relating to child planning, recall and small-group time strongly reflect curriculum issues that go to the core of appropriate practices for early learning programs. Despite their benefits for both learning and classroom management, child planning for free-choice activities and the use of recall of free-choice experience as a reflective and language-

[1]The PQA was designed as a set of program quality standards – and for this reason operates from different assumptions than most measurement tools. Rather than looking for variation over a set of quality measurement indices, the "goal" in using the instrument is to score "5" on all of the items – a situation of uniformity that requires tailoring of statistical analyses.

development strategy are too often overlooked in classroom practice either because of the time they consume or because they are associated with particular curriculum models – or both.

The relatively low score for anecdotal note-taking is reflective of the fact, noted in the analysis of the Narrative Summary reports (see Part 3), that the large majority of MSRP programs are using child assessment tools that do not involve extended observation and note taking.

The incidence of these low-scoring PQA items, indicates an as yet unmet need for curriculum and program training and technical assistance among MSRP programs across the state.

Risk Factor Data from the MSRP Statewide Evaluation

MSRP serves four-year-old children "at risk of becoming educationally disadvantaged and who may have extraordinary need of special assistance." Children are eligible to participate in MSRP if they are determined to have at least two risk factors (see Table 2.4) identified as a potential threat to later educational success by the Michigan Department of Education. Fifty percent of all eligible children must have low income as one of their risk factors. Low income is defined as federal reduced-lunch eligibility which is 185% of the federally defined poverty line. (Compare with Head Start eligibility at the poverty line.). Although two factors qualify children for access to the program, grantees are required to report the presence or absence all 25 identified risk factors for each child.

When the risk factors were first introduced as program eligibility criteria, factor definitions were left fairly open to allow for local flexibility. Now, after several years of implementation, the Department of Education and High/Scope plan to survey programs identified as being proactive in their use of the risk factors to compile empirical definitions of how the risk factors are defined and substantiated in the field. In addition to this compilation of widely and successfully implemented factor definitions, High/Scope will make training available to the statewide workforce, under the GESP project, on using risk factors to help guide specific interventions with the at risk children in the classroom.

Table 2.3. PQA Items on Which Over 10% of Classrooms Score 3 or Less

PQA Categories	PQA Item	% of classrooms scoring 3 or less
Learning Environment	Outdoor space, equipment, materials	22.9
	Organization and labeling of materials	11.4
	Diversity related materials	16.6
	Displays of child-initiated work	13.8
Daily Routine	Time for child planning	22.5
	Time for child recall	38.0
	Small group time	25.6
	Large group time	12.4
	Choices during transition times	12.2
	Outside time	18.7
	Support for non-english speakers	11.3
Curriculum Planning and Assessment	Curriculum model	15.8
	Team teaching	19.7
	Anecdotal note taking by staff	30.6
	Use of child observation measure	12.3
Parent Involvement and Family Services	Parents on the policy making committee	25.8
	Extended learning at home	10.3
Staff Qualifications and staff development	Program director's education	13.1
	Instructional staff's education	11.6
	Head teacher's experience	14.0
	Assessment to identify training needs	17.8
	Ongoing professional development	21.5
	Inservice specific to child development	13.7
	Inservice combining theory and practice	12.6
	Continuity of trainer	29.1
	Particpatory hands-on inservice	11.9
	Opportunities for reflecting and sharing	14.6
	Observation and feedback	17.1
	Supervision of supplementary staff	17.2
	Professional organization affiliation	42.5
Program Management	Continuity of instructional staff	15.2
	Accessibility to those with disabilities	13.2
	Funds to equip and maintain classroom	10.4
	Funds to hire appropriate staff	24.4
	Funds to support staff development	16.8
	Funds to support parent involvement	13.8

Analysis of the Statewide 1998-99 Risk Factor Data

Findings from the following analysis of the 1998-99 statewide risk factor data are presented at the state level of aggregation. Although the distribution of factors does vary by site, preliminary analyses have not demonstrated large differences in the risk factor profile at the county level or when programs are grouped by size. Tables 2.4 and 2.5 both present data over

time for the percentage of the MSRP population with a factor (prevalence) and the number of factors that

children experience (incidence). Both prevalence and incidence demonstrate remarkable stability over the period for which data are presented.

Prevalence of Risk Factors

In 1998, risk-factor data were collected for over 19,000 children across the state. Column 2 of Table 2.5 presents the risk factor prevalence for 1998. "Low family income" and "Single

Table 2.4. Percentage of Children Experiencing Certain Risk Factors[2] (1996 and 1998 MSRP data)

Risk Factors*	Percentage of Children in 1998 (total N=18831)	Percentage of Children in 1996 (total N=19435)	Change in Rank
Low Family Income	67.2%	67.6%	0
Single Parent	41.6%	41.0%	0
Family History of Academic Failure	31.4%	25.1%	1
Rural or Segregated Housing	25.2%	28.6%	-1
Unemployed Parent/Parents	24.6%	24.2%	0
Teenage Parent	21.4%	20.2%	1
Low Parent/Sibling Educational Attainment or Literacy	19.1%	20.6%	-1
Parent/Sibling Loss by Death or Divorce	18.7%	17.6%	0
Language Deficiency or Immaturity	18.4%	17.3%	0
Developmentally Immature	16.5%	15.2%	0
Diagnosed Family Problems	15.4%	12.6%	1
Family Density	14.6%	13.2%	-1
Nutritionally Deficient	13.4%	12.3%	1
No Stable Support System or Residence	13.1%	12.6%	-1
Substance Abuse or Addiction	12.6%	11.4%	0
Chronically Ill Parent or Sibling	12.0%	10.6%	1
Child's Long Term or Chronic Illness	11.5%	10.8%	-1
Low Birth Weight	11.1%	9.4%	0
Limited English Speaking Household	10.5%	8.5%	0
Destructive or Violent Temperament	8.3%	7.7%	0
Family History of Delinquency	7.5%	6.0%	1
Incarcerated Parent	7.2%	6.0%	1
Child Abuse or Neglect	6.8%	6.8%	-2
Diagnosed Handicapping Condition	5.4%	5.2%	0
Other	2.9%	3.4%	0

* Excludes those with less than 2 risk factors.

[2]Since two risk factors is a minimum required for MSRP participation, cases with less than two risk factors indicated were considered erroneous and were excluded from the analysis. They amounted to less than 2% of all cases.

parent" are the most common risk factors: about 75% of all children in the MSRP program have one of these two factors. This is as expected in a program that requires that 50% of all eligible children have low income as one of the two minimum required factors. However, only about 32% of MSRP children have both factors and none of the risk factors correlate more strongly than "Low family income" and "Single parent." Only 7 pairs of factors have Pearson correlation coefficients greater than .20 and none are greater than .25.

Risk Factor Incidence

MSRP children averaged 4.19 risk factors per child. More complete risk factor incidence information is presented in Table 2.5 below. Incidence is a crucial consideration because logic suggests that the more factors a child demonstrates, the higher the risk of school failure. As reported in section I of this report, data from the MSRP State Longitudinal Study reinforces this intuition. For the cohort-one MSRP group of

Table 2.5. Risk Factor Levels

Number of Risk Factors*	Percentage of Children in 1998 (total N=18831)	Percentage of Children in 1996 (total N=19435)
2	22.4%	22.4%
3	25.8%	26.5%
4 thru 7	44.1%	42.0%
8 or more	7.7%	9.1%
Total	100.0%	100.0%

* Excludes those with less than 2 risk factors.

the State Longitudinal Study, the number of risk factors documented in preschool is inversely correlated child outcome measures in the kindergarten year. This relationship holds up in multivariate regression analyses as well.

Levels of Risk: High and Low

Because findings from the MSRP State Longitudinal Study have suggested that higher numbers of risk factors are associated with lower child development outcomes, we thought it would be useful to conceptualize the statewide risk factor profile in terms of high and low risk. When the line is drawn between the roughly half of the MSRP population with 2-3 risk factors (n=9,307) and the remaining half of the population with 4 or more factors (9,712), two very distinct populations appear. These population segments are described in Table 2.6 below.

Table 2.6. Top 10 Risk Factors by Level of Risk (1998 MSRP data)*

Risk Factors for Low Risk (2-3 factors) Children (N=9307)**	% of Cases	Risk Factors for High Risk (> 3 factors) Children (N=9712)**	% of Cases
Low Family Income	58.0%	Low Family Income	74.3%
Single Parent	31.7%	Single Parent	48.7%
Rural or Segregated Housing	17.8%	Family History of Academic Failure	44.3%
Family History of Academic Failure	15.7%	Unemployed Parent/Parents	33.5%
Unemployed Parent/Parents	13.3%	Teenage Parent	30.3%
Language Deficiency or Immaturity	12.1%	Rural or Segregated Housing	29.7%
Developmentally Immature	10.7%	**Low Parent/Sibling Educational Attainment or Literacy**	28.4%
Teenage Parent	10.1%	Parent/Sibling Loss by Death or Divorce	27.1%
Limited English Speaking Household	9.7%	**Diagnosed Family Problems**	24.0%
Parent/Sibling Loss by Death or Divorce	8.2%	Language Deficiency or Immaturity	23.0%

* Factors in bold are those not present in the corresponding population with the different level of risk.

** Excludes those with less than 2 risk factors.

Part 3 – Grantee Evaluation Support Project

Summary of the Grantee Evaluation Support Project

High/Scope Foundation has a long history of work and research in early childhood education. In particular, the High/Scope Perry Preschool study[1], begun in 1962 continues to demonstrate that high quality early childhood programs can have long-term positive impacts on the lives of disadvantaged children by improving their educational attainments, reducing their involvement in serious crime, increasing their lifetime earnings, and reducing their dependence on social services. The result is that high-quality early childhood programs can be cost-beneficial, returning to the state many dollars in increased tax revenues and reduced social service and criminal justice costs for each dollar invested in running the program.

High/Scope was, therefore, an early supporter of the State of Michigan's plan, in the last 15 years of the 20th century, to launch a state-wide preschool program that would bring high-quality early childhood services to unserved, at-risk children throughout the state. High/Scope staff provided evidence, in legislative hearings, of the value and economic sense of good early childhood services as the MSRP program was formulated, and High/Scope sought to play an active role in the program's implementation.

Knowing the importance of quality to the success of early childhood programs and being familiar with the contribution that ongoing evaluation makes to assuring high quality, High/Scope began in the early 1990s to discuss with the Michigan Department of Education and with the W. K. Kellogg Foundation how we might assess and contribute to the quality of the MSRP programs throughout the state. High/Scope pursued funding from both the State Legislature and from the Kellogg Foundation to support both an evaluation and a training effort in the state. In April 1995, in response to a request for proposals from MDE, High/Scope received a grant to begin planning a state-wide evaluation of the MSRP project. Subsequent MDE funding allowed the evaluation plans to be put into action in late 1995. High/Scope also began at that time to formulate a state-wide training project that would enhance the capacity of local MSRP projects to gather and use evaluation information. In 1998 High/Scope received a grant from the W. K Kellogg Foundation to support the training effort designed to help local MSRP projects use evaluation to support the quality of their programs. The resulting set of activities, described in detail below, constitutes the High/Scope MSRP Grantee Evaluation Support Project (GESP).

Goals and Plan of the MSRP Grantee Evaluation Support Project

The goal of the GESP is to saturate School Readiness programs throughout the state with an evaluation consciousness that encompasses both organizational and technical underpinnings

---

[1]Schweinhart, L. J., Barnes, H. V., & Weikart, D. P. (1993) *Significant benefits: The High/Scope Perry Preschool study through age 27.* Ypsilanti, MI: High/Scope Press

BEST COPY AVAILABLE

of successful local evaluations. In addition to expertise in data collection and feasible evaluation designs, the GESP seeks to enhance the capacity of local MSRP programs to use evaluation data in a process of ongoing program improvement. It provides specific training in how local programs can use evaluation results (both local and state-wide) to strengthen and improve the particular features of their local programs so that they can achieve high levels of program quality effectiveness.

Figure 3.1, (See next page.) depicts the planning, decision making structure at the local level – the arena in which performance indicators can play a role in affecting the actions local programs undertake in pursuit of overall program goals. This is the operational focus of the feedback loop that effective evaluation can provide. Figure 1 also puts local evaluation in a somewhat realistic context of where these processes are seen as parallel to local project's main theme of operating and providing services.

The Grantee Support Project includes components that specifically address the challenges and skill needs for enhancing the evaluation consciousness of local early childhood programs. These components are taken up in the description of the Grantee Support Project training activities, that follows.

Training and Support Activities of the Grantee Evaluation Support Project

Linking Assessment to School Improvement

The linkage of assessment to change at the classroom/instructional level is not self-implementing, but rather requires that programs build in an ongoing process of using assessment information to guide program change and staff development. Studies of public school assessment[2] indicate that:

- Classroom-level change requires a substantial and long-term commitment to professional development
- The assessment-improvement linkage is not successfully made without administrative support
- Assessment for accountability or reporting to high levels of authority may not be appropriate for purposes of instructional improvement
- There is a need to work out specific linkages between assessment results and corresponding strategies for program improvement

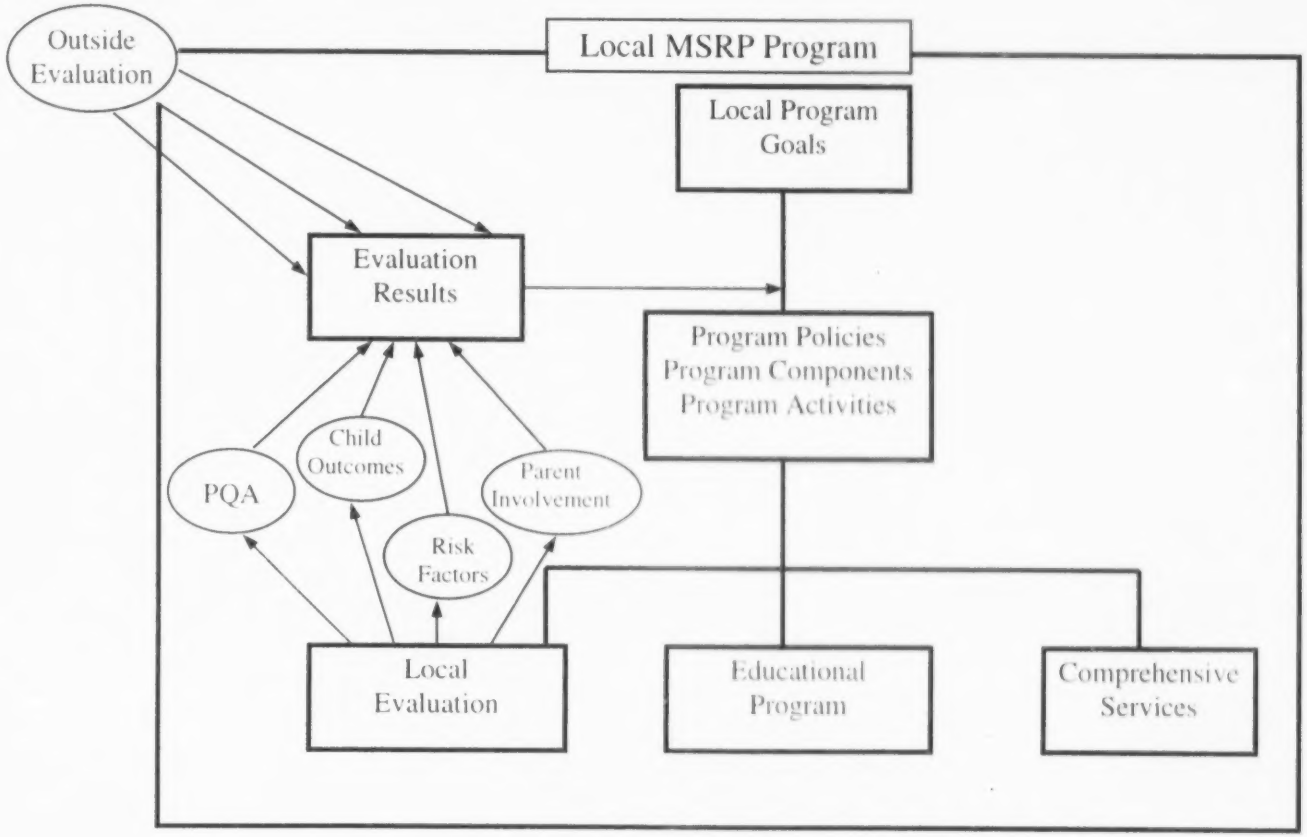
The MSRP Grantee Evaluation Support Project builds upon the school reform concept to

---

[2]Schmoker, Mike. 1996. Results: The Key to Continuous School Improvement; Valencia, Sheila and Karen Eixson. 1999. "Policy Oriented Research on Literacy Standards and Assessment" CIERA Report #3-004; Stecher, Brian, Sheila Barron, Hilda Borko, and Shelby Wolf. 1997. "Important Features of State Assessment Systems from the Local Perspective." CSE Technical Report 472; Noble, Audrey and Mary Lee Smith. 1994. "Measurement Driven Reform: Research on Policy, Practice and Repercussion." CSE Technical Report 381.

Figure 3.1

Evaluation Within Local Programs



3 — 3

move from measurement instruments and comparison data to the delivery of support and training tailored to individual program improvement needs. In addition, school reform research above identifies the issues of low- vs. high-stakes evaluation and organizational structure as considerations for training to address if it is to have an impact on programs and instruction and hence, on subsequent assessment results.

Focusing on Low-Stakes, Program Improvement Evaluation

We see the primary purpose of the GESP as supporting local programs in using their local evaluations for formative, low-stakes decision making about program improvement. Our goal is to assist local programs in using their evaluations for program improvement. The strategy of the GESP is to focus workshop training on the "Goals/Activities/Outcomes" section of the Narrative Report Summary so that this section embodies the MSRP local evaluation and also serves as a working document that informs on-going program improvement. The Narrative Report Summary, is the section of the local program's annual report to MDE in which they are asked to describe their program's goals, the activities used to implement these goals, and the evaluation results reflecting the status of these efforts. Using the Goals/Activities/Outcomes section of the Narrative Summary this way allows local evaluations to serve both a monitoring/reporting function with respect to state authorities and a program improvement function locally.

Two Tiers of Training

The GESP training strategy targets the two tiers of persons involved with program evaluation at the local level and stems from the recognition that useful evaluation involves organizations, not just individuals. Although it is not, in most medium-sized and larger districts, the classroom staff that carry out program evaluation and reporting responsibilities, it is classroom staff who collect the data on program quality, parent involvement, and child development. Furthermore, classroom staff need to be comfortable interpreting evaluation findings after assessments of individual children and program attributes are aggregated into the data on program-level findings.

The second target in the evaluation capacity-building effort are those who actually make evaluation decisions, such as choosing assessment instruments, assembling and analyzing data, and reporting to the state at the grantee level. An analysis of these reports (see Part 2) indicates that about 60% of those signing the Narrative Summary Reports in 1997-1998 were persons other than MSRP teachers or education specialists. It is the Narrative Report signers that we hope to reach through the second tier of training – Individualized Evaluation Consultation Sessions.

Training Activities of the Grantee Evaluation Support Project

As was stated earlier, the overall mission of the GESP is to strengthen the capacity of School Readiness program staff throughout the state to evaluate the quality of their programs and

how well their programs contribute to children's development. In order to accomplish these ends, several GESP objectives were established:

- Increased local understanding of evaluation of program quality and effectiveness
- Increased use of comprehensive observational child assessment instruments
- Increased local capacity for high-quality evaluation
- Increased linkage between program evaluation and program improvement
- Identification of a cohort of evaluation trainers/consultants based in grantees and intermediate school districts

In order to meet these objectives, three workshops were developed that would address important components of the Local Evaluation Model: (a) assessment of the process of what the program does and the services it provides, (b) assessment of child outcomes, and (c) a methodology for local evaluations emphasizing measurement, instrumentation, and the use of comparison data. For the training cycle September 1998 to August 1999, the workshops topics were:

Using the High/Scope Program Quality Assessment (PQA) to Assess Program Quality: a two-day workshop focusing on program quality guidelines and assessment. It features the High/Scope Program Quality Assessment instrument, used by the Michigan Department of Education to monitor program quality and compliance of all MSRP programs.

Using the High/Scope Child Observation Record to Assess Children's Development - a two-day workshop presenting major features of observational child assessment using the High/Scope Child Observation Record.

Conducting a Preschool Evaluation - a one-day evaluation design workshop linking measurement instruments, data collection, comparison data from statewide evaluation results, and the reporting of local evaluation results.

The Program Quality Assessment and Child Observation Record Workshops provide valuable knowledge and skill for the Michigan early childhood workforce and are central to the MSRP Local Evaluation Model. The Evaluation Design workshop helps local evaluators think about their programs in terms of two distinct types of evaluative activity: process evaluation and outcome evaluation. *Process evaluation* involves descriptions of program attributes and measurements of their strength using the Program Quality Assessment (PQA) and Parent Involvement Questionnaire (PIQ). *Outcome evaluation* focuses on gains in child development derived from scores on the Child Observation Record (COR) and the School Readiness Rating Scale (SRRS).

BEST COPY AVAILABLE

Workshop evaluations and trainer reports indicate that the 1998-99 training cycle has produced some significant results. One result is that the GESP workshops have had an impact on participants' general knowledge of best practices in the field of early childhood education. COR trainings have had an impact on participants' understanding of key areas of child development and their ability to collect child assessment information. The PQA workshops have emphasized best practices in the areas of adult-child interaction, preschool learning environment, and daily routine and improved participant understanding of them.

Many participants of the *Conducting a Preschool Evaluation* workshop reported in their evaluations that they came away from the training with a new understanding of the importance of using comprehensive child assessment instruments that are observation-based in order to provide a thorough and authentic record of children's development over time. Another outcome is that, by becoming familiar with the assessment instrumentation used by the State Longitudinal Study (i.e., COR, PQA, PIQ, and SRRS) participants gained a clearer understanding of how school readiness is defined and measured in the State Longitudinal Study. Additionally, they gained a broader perspective on school readiness as it spans preschool through the early elementary grades. Finally, many participants expressed an interest in a using a computerized version of the COR in order to streamline their workload and professionalize the reporting forms they provide to parents.

In response to what was learned in the 1998-99 training cycle, four additional workshops were offered in the 1999-2000 training cycle:

Improving Program Quality: A PQA Follow-up - a one day workshop that focuses on best practices in the area of preschool active learning and adult-child interaction strategies and their impact on these sections of the PQA: Learning Environment, Daily Routine, and Adult-Child Interaction. This workshop starts to bridge the gap between evaluation training and curriculum training.

Using the Computerized COR - a one-day workshop that provides a thorough introduction to using the computerized version of High/Scope's COR. The computerized version is less time-consuming than the paper version.

Observation and Assessment of Young Children - a one day workshop that emphasizes the importance of using observation and authentic assessment to understand children's development; offers participants guidance in selecting and developing a plan for using a child development instrument that is both comprehensive and diagnostic. This workshop was designed for Detroit and other grantees who are using non-observational instruments at present.

Individual Evaluation Consultation Session: A follow-up to the Evaluation Design Workshop - a half day session that offers individualized assistance and custom local evaluation data reports to individuals who are at various stages of the

process of designing or conducting an evaluation of their local program. The individual consultations go beyond the evaluation design workshop to work through the local issues with selected grantees.

Summary of GESP Training Participation

For the 1998-99 MSRP training cycle (September 1998 to August 1999), the GESP offered a three-workshop series statewide. In the 1999-2000 cycle (August 1999 to January 2000), the GESP has offered four additional workshops statewide, and has delivered training to 1688 participants at over 70 workshops and conferences over its two years. Table 3.1 out all the workshops so far conducted by type, and number of participants. The workshops were hosted primarily by Intermediate School Districts across the state, with 50 of 57 ISD's hosting.

Table 3.1. GESP Trainings Delivered by Workshop Type

	Conducting a Preschool Program Evaluation	PQA	COR	Computer COR	PQA Follow Up	Observational Assessment	Individual Consultation
# of workshops	23	28	33	5	4	1	4
# of trainees	269	486	628	101	121	60	23
% of total	(16%)	(29%)	(37%)	(6%)	(8%)	(3%)	(1%)

Table 3.2. Trainings Delivered vs. Potential Demand

	Trainings delivered 1998-2000	Potential demand
For ISDs in which workshops occurred	1688	3339
For all ISDs	1688	4323

Training Coverage

The distribution of trainings across the various categories of the statewide MSRP workforce, or coverage, can be considered as the ratio of trainings delivered to potential demand at district, ISD, and state levels. The potential demand for training among the MSRP workforce was estimated from the total number of MSRP Children and the approximate adult/child ratios across the state. The estimate of the total MSRP staff statewide times the number of workshops

gave us an approximation of the potential demand for training. In the 1998-2000 trainings so far, High/Scope has trained a number equivalent to half of all the MSRP staff in the ISD's that held workshops (although not all participants were from MSRP, see Table 3.2)

Table 3.3. GESP Workshop Participants by Agency

Agency Type	% of total (*n*=228)
Public School MSRP	65%
Head Start	24%
Private Non-profit	9%
Private For-profit	1%

Table 3.4. GESP Workshop Participants by Job Title

Job Title	% of total (*n*=211)
Lead Teacher/Teacher	56%
Assistant Teacher	12%
Aide	20%
Director	11%

Characteristics of GESP Training Participants

The following profile in Tables 3.3, 3.4 and 3.5 is based on available data from the GESP workshops. Tables 3.3 - 3.5 show the diversity and complexity of program type, education levels and job responsibilities, in MSRP workshop participation. The GESP is well-positioned to affect the larger field of early childhood education statewide with its breadth and depth.

Program Characteristics Related to Assessment and Evaluation

The assumption of responsibilities for assessment and program quality evaluation within MSRP grantees is extremely varied both across all agencies and when agencies are grouped by size. There is no effective means to predict who will be completing program quality assessments, child assessments, or program evaluations. This fact is extremely important given that all of the GESP workshops aim towards an evaluation model which depends on having the person actually carrying out the program evaluation and reporting to the state also making decisions concerning measurement, instrumentation, and evaluation design. These people must be identified agency by

Table 3.5. GESP Workshop Participants by Education Level

Education Level n=251	Less than HS	HS	<2 yrs. college	Associates degree	Bachelors Degree	Masters Degree	Education Specialist
%	3%	8%	14%	9%	39%	16%	8%

agency – and are often not MSRP teachers, nor the education specialist affiliated with the program, nor the district contact person. In 1999-2000, only 39% of those completing the MDE Narrative Summary form were listed as MSRP teachers, Education Specialists, or both (see Figure 3.5 below).

Training Impact

For the 1998-1999 year, MSRP programs were asked to complete a section on the Narrative Summary form that elicited feedback from people who attended the training as to its impact on their program. Of the 350 programs that gave feedback, 37% offered some response to this inquiry (quite similar to the 39% estimated earlier). Table 3.6 show the range of responses for those who mentioned some impact of the training.

Table 3.6. Impact of the MSRP Evaluation Workshop Series on the MSRP Workforce

Training benefit	% Responses
Increased knowledge of child assessment	38%
Increased knowledge of program quality	24%
Opportunity for Staff Reflection	8%
Increased understanding of Evaluation Capacity/Program Improvement	30%

Monitoring the Need for Evaluation Support to MSRP Grantees

In addition to the training-and-technical-support function which the GESP is designed to serve, the project also manages three program-related data streams for the state: (1) year-end program summaries for each grantee (Narrative Summary form), (2) Program Quality Assessment results for each MSRP classroom, and (3) risk factor information for each child enrolled in the program. The responsibility for aggregation and reporting on these large, statewide data sets adds program monitoring and evaluation feedback dimensions to the GESP.

The Narrative Summary report, completed annually by each MSRP program, provides an excellent source of insight into the evaluation consciousness and capacity of MSRP grantees. The Narrative Summary forms are completed by August of each year and summarize program-

level information concerning demographics, participant transitions, parent involvement, program strengths and weaknesses, enrollment, and evaluation of program processes and outcomes. Several questions in the report form ask the program to describe evaluation results and are useful in understanding what programs choose to evaluate and how well they are able to do it.

Completion of the Narrative Summary represents a significant amount of effort. The GESP goal is to make the process of completing the Narrative Summary form an integral part of a program planning and improvement process within each MSRP local program. Because the form requires input from project staff as well as administrators, it is a perfect opportunity to engage the entire organization in a process of review, goal setting, and evaluation planning.

Analysis of the Narrative Summary Form as an Indicator of Evaluation Capacity

This section presents an estimate of the evaluation capacity of MSRP grantees from our analysis of the Narrative Summaries submitted by local MSRP programs for the 1998-99 program year. The estimates are in four areas – assessment instruments used, use of child-level outcomes in program evaluations, inclusion of longitudinal effects, and organizational capacity to carry out program evaluation.

State program evaluation guidelines require the grantees have in place an evaluation plan that:

> covers implementation of all required program components and an assessment of gains of the participating children in the program. These gains shall reflect social relationships, emotional development, physical coordination as well as cognitive growth and include a process for collecting longitudinal data on children participating in the program as they enter kindergarten and attend first grade. (State Board Criterion)

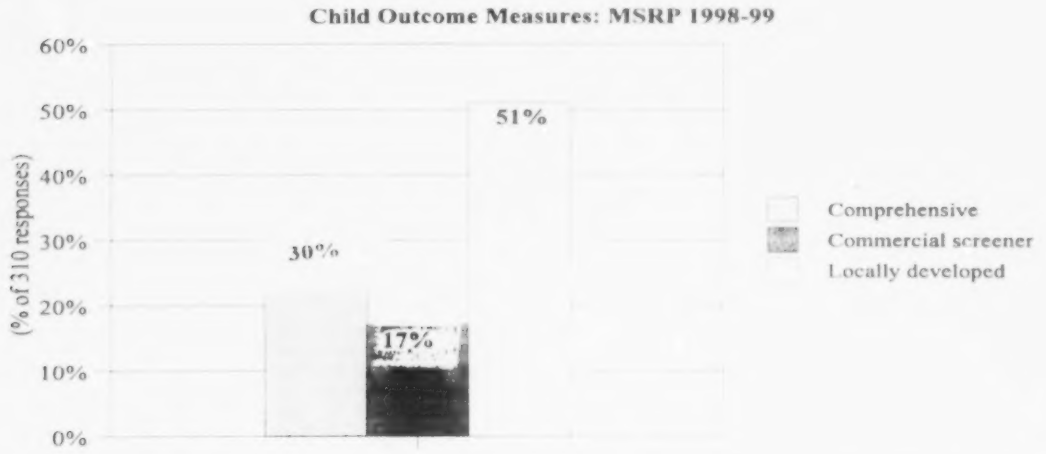
Overall, however, our analyses indicate that MSRP grantees statewide are *not* focused on the assessment of child-level outcomes, are *not experienced* in the translation of child assessment into larger judgements about program processes and strategy, and are located within education organizations which often *lack a structure of responsibility for assessment and evaluation* which integrates preschool staff, early elementary teachers and school administrators.

Comprehensive Child Assessment

One of the key issues in the measurement of child-level outcomes is the type of instrument used. This is especially relevant given the state requirement that programs measure fall-to-spring gains in a broad array of content areas (e.g. social development, emotional development, etc.). As Figure 3.2 below indicates, 30% of MSRP grantees report using child outcome measurement instruments which are comprehensive in scope and have psychometric properties making them able to measure gain. Another, 17% of all program use one of the commercial screeners (e.g. Dial-R, Brigance, Gessell, ABC, and Early Screening Inventory.) These are often instruments with established reliability and validity but are not typically appropriate for the calculation of fall-to-spring gains and are usually not comprehensive in the content areas measured. Finally, over 50% of public school preschool programs use a child-outcome measure which they describe as locally developed. Many of these instruments are very rudimentary checklists and one-time skills inventories which cannot by themselves measure children's development.

The essential point here is that for most public-school based preschools in Michigan, child-level outcomes are often assessed with tools of questionable psychometric quality that do not meet state guidelines for measuring developmental gains. Further, the large "locally developed " category in Figure 3.2 effectively precludes the comparison of outcomes across the majority of programs in the state. Hence, our first conclusion – that most MSRP evaluations are

Figure 3.2



not focused on child-level outcomes because the child assessment instruments they are using are not suited to such a focus.

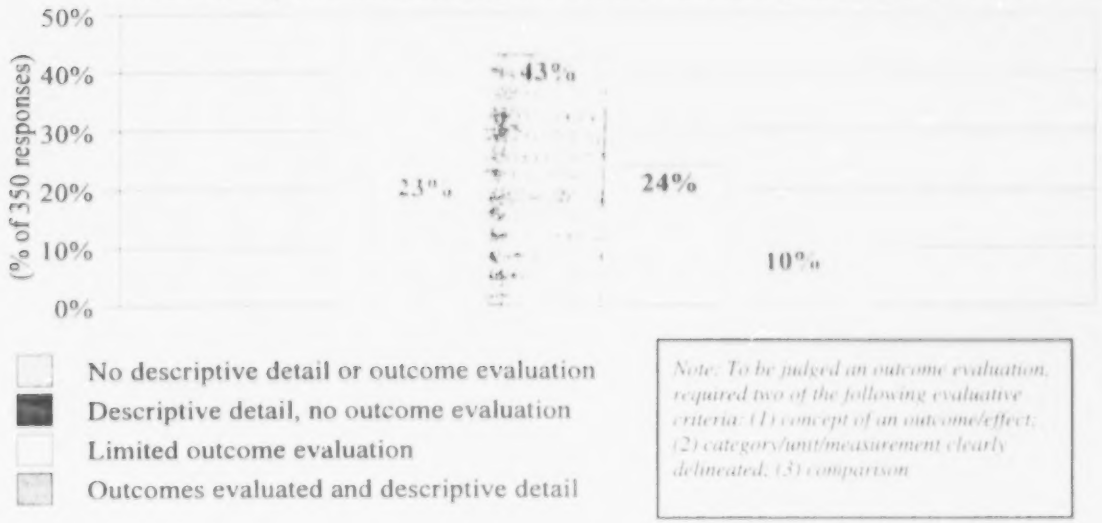
BEST COPY AVAILABLE

From Child Assessment to Outcome Evaluation

The information provided in Figures 3.3 and 3.4 below describes the characteristics of evaluation results which MSRP programs' Narrative Summaries report for child-level outcomes during and after the preschool year. In Figure 3.3, the second (and tallest) bar reveals that, while many programs effectively describe program processes and implementation, the majority of programs in the state *do not even mention the concept of a child level outcome* in their reports to the state. The third bar describes programs that at least mentioned that child outcomes were in fact occurring as a result of the program intervention. Only 10% of programs (the fourth bar) chose to report child outcome data that included (1) any kind of quantitative results from a (2) child measurement instrument and (3) relate these results to some form of meaningful evaluative comparison. Any two of these criteria were accepted as indicating an outcome evaluation. Although a significant number of programs did mention the measurement of child outcomes – and Figure 3.2 suggests that most MSRP programs do employ a child assessment instrument of some type – most of these programs did not report outcome results in their Narrative Summaries. This suggests that while programs may be assessing children, they perform poorly in terms of aggregating this information into the kind of results which facilitates decision making at the

Figure 3.3

Evaluation Report Characteristics: MDE Narrative Summary Form, 1998-99



Note: To be judged an outcome evaluation, required two of the following evaluative criteria: (1) concept of an outcome/effect; (2) category/unit/measurement clearly delineated; (3) comparison

program level. This interpretation rests upon the assumption that if programs had aggregated results, they would have reported them when asked for such evidence in their Narrative Summaries. We know for certain that over 60% of MSRP grantees do not even mention that change at the child level is occurring and only 10% include the minimal information to make any kind of judgement that the program might be producing its intended results.

BEST COPY AVAILABLE

Figure 3.4 suggests similar conclusions in relation to longitudinal reporting. Most MSRP programs in the state do not appear to effectively measure the child-level impacts which their programs produce in subsequent years, and when they do, programs do not typically aggregate from the individual to larger groups. In this instance, the absence/presence of child-level outcomes in the Narrative Summary differentiates between simple reporting on transition (what kind of classroom and array of services the child moves into following MSRP) and reporting on

Figure 3.4

Longitudinal Reporting Characteristics: MDE Narrative Summary Form, 1998-99

performance (referring primarily to social and academic outcomes). The majority of Narrative Summary reports contain follow-up information pertaining only to transition to elementary school during the year following MSRP. These additional observations on the relative dearth of child outcome data in Narrative Summary reports strengthen our conclusion that MSRP programs are not focused on child outcomes and consequently, are not translating such information into program decisions. (A similar conclusion can be drawn regarding local programs' lack of use of Program Quality Assessment data.)

Child outcomes should be particularly important in this context, given the fact that it is precisely teacher perceptions of child behavior, disposition, and ability in the kindergarten year which determine how ready the child is for school. One key issue that may explain the relative lack of longitudinal efforts is the weakness of linkage between MSRP classrooms and kindergarten and early elementary personnel. As we have traveled the state working with MSRP staff, we have consistently heard about the difficulties that preschool staff have in coordinating with public school staff – even though MSRP classrooms are often located in the same public school buildings.

Evaluation Capacity and LEA Organization

As the discussion of Narrative Summary data suggests, another significant consideration in the attempt to raise the capacity of local education providers to evaluate program processes and outcomes is organizational. Program evaluations cannot be used productively when the

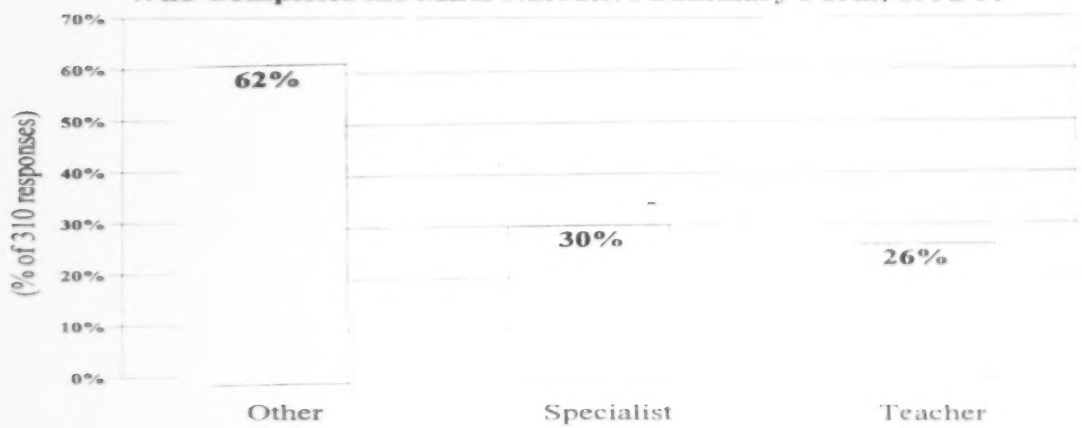
BEST COPY AVAILABLE

organization being evaluated is not coordinated around the effort. Local evaluations are often not methodologically suitable for high-stakes decision making (i.e., deciding future MSRP funding). This role is better given to the outside, statewide evaluation. If, in addition, local evaluations do not serve a formative purpose at the agency level, then their value in their current form is truly questionable.

Figure 3.5 shows that over 60% of those who sign off as the person completing the Narrative Summary form are neither lead teachers nor the education specialist associated with the local MSRP program. This fact may represent a significant organizational disconnect in the programs when the average number of lead teachers per grantee is well under 3. In our discussions with staff across the state on this matter, it is clear that evaluation responsibilities are not located in a consistent organizational role, and classroom staff are often unaware of the Narrative Summary form itself – the primary evaluative document in most programs.

Figure 3.5

Who Completes the MDE Narrative Summary Form, 1998-99



BEST COPY AVAILABLE

MSRP Program Evaluation – Part 1 Appendix Tables

1. Cohort 1 Kg.: COR Total Scores by Group and Site Controlled for Key Covariates
2. Cohort 1 Kg.: Analysis of Covariance for COR Total Scores and Subscale Scores
3. Cohort 1 Kg.: SRRS Total Scores by Group and Site Controlled for Key Covariates
4. Cohort 1 Gr.1: SRRS Total Scores by Group and Site Controlled for Key Covariates
5. Cohort 1 Gr.2: SRRS Total Scores by Group and Site Controlled for Key Covariates
6. Cohort 1 Kg. / Gr.1 / Gr.2: SRRS Item Scores for Program Effects Controlled for Key Covariates
7. Cohort 1 Kg.: COR Subscale Scores by Group and Site Controlled for Key Covariates
8. Statewide Risk Factor Data 1996: Distribution of Total Number of Risk Factors by Study Site
9. Cohort 1 PreKg.: Total Scores for Program Quality Assessment (PQA) by Study Site

Appendix Table 1. Cohort 1 Kindergarten (Kg.): COR Total Scores by Group and Site Controlled for Key Covariates

	MSRP			Comparison			Total		
Site/Group	***n***	***Mean***	***SD***	***n***	***Mean***	***SD***	***n***	***Mean***	***SD***
Site A	44	3.39	.46	41	3.56	.39	85	3.47	.43
Site B	43	3.51	.34	40	3.27	.37	83	3.39	.37
Site C	58	3.22	.51	36	3.20	.43	94	3.21	.48
Site D	41	3.73	.61	24	3.44	.52	65	3.62	.59
Site E	24	3.74	.51	35	3.11	.46	59	3.37	.57
All Sites	210	3.47	.53	177	3.31	.45	387	3.40	.50

Note. *n*=sample size; *SD*=standard deviation. Key covariates = *mother's education, father at home, household size, gender* and *age*. Analysis of covariance found statistically significant effects for ***program*** ($p<.001$), ***site*** ($p<.001$) and ***program by site*** ($p<.001$) on COR Total scores.

Appendix Table 2. Cohort 1 Kindergarten: Analysis of Covariance for COR Total Scores and Subscale Scores

Covariate	Evidence of Significant Effects on COR Total and Subscale Scores						
	Initiative	Social Relations	Creative Representation	Music & Movement	Language & Literacy	Logic & Math	COR Total
Program	***p*<.001**	***p*<.001**	***p*<.01**	***p*<.01**	***p*<.001**	No	***p*<.001**
Site	***p*<.01**	***p*<.01**	No	***p*<.01**	***p*<.05**	***p*<.001**	***p*<.001**
Program by Site	***p*<.05**	***p*<.01**	*p*=.077	***p*<.01**	***p*<.001**	***p*<.01**	***p*<.001**
Gender	No	***p*<.001**	*p*=.062	*p*=.060	No	No	***p*<.05**
Program by Gender	No	No	No	No	No	No	No
Age	***p*<.05**	No	No	No	No	***p*<.05**	No
Mother's education	No	No	No	*p*=.077	No	No	No
Father at home	No	*p*=.067	No	No	***p*<.05**	No	No
Household size	No	*p*=.053	No	No	***p*<.01**	No	No
Amount of variance explained (R^2)	12.4%	15.5%	10.4%	14.6%	19.5%	26.5%	20.3%

Note. Significant effects: $p<.05$; Nearly significant trends: $.10>p>.05$; No= No significant effects: $p>.10$. The sample size (*N*s) are between 377 and 387.

Appendix Table 3. Cohort 1 Kg.: SRRS Total Scores by Group and Site Controlled for Key Covariates

Site/Group	MSRP			Comparison			Total		
	n	*Mean*	*SD*	*n*	*Mean*	*SD*	*n*	*Mean*	*SD*
Site A	31	2.70	.33	38	2.56	.48	69	2.63	.42
Site B	35	2.75	.34	45	2.54	.54	80	2.63	.47
Site C	48	2.38	.54	28	2.49	.41	76	2.42	.50
Site D	40	2.53	.48	25	2.63	.36	65	2.57	.43
Site E	30	2.69	.38	0	—	—	30	2.69	.38
Site F	28	2.77	.29	16	2.54	.39	44	2.68	.34
All Sites	212	2.61	.44	152	2.55	.46	364	2.59	.45

Note. *n*=sample size; *SD*=standard deviation. Key covariates = *mother's education, father at home, household size, household income, gender* and *age*. Analysis of covariance found statistically significant effects for ***site*** ($p<.001$) and nearly significant trends for ***program by site*** ($p=.069$) on kindergarten SRRS Total scores.

Appendix Table 4. Cohort 1 Gr.1: SRRS Total Scores by Group and Site Controlled for Key Covariates

Site/Group	MSRP			Comparison			Total		
	n	*Mean*	*SD*	*n*	*Mean*	*SD*	*n*	*Mean*	*SD*
Site A	43	2.28	.55	35	2.48	.49	78	2.37	.53
Site B	40	2.44	.44	32	2.24	.54	72	2.35	.49
Site C	39	2.44	.43	25	2.47	.37	64	2.45	.40
Site D	35	2.52	.46	23	2.46	.48	58	2.50	.46
Site E	28	2.58	.43	9	2.60	.48	37	2.59	.44
Site F	25	2.54	.44	14	2.25	.48	39	2.44	.47
All Sites	210	2.45	.47	138	2.40	.48	348	2.43	.47

Note. *n*=sample size; *SD*=standard deviation. Key covariates = *mother's education, father at home, household size, household income, gender* and *age*. Analysis of covariance found no significant effects for *program, site, or program by site* on Gr.1 SRRS total scores.

Appendix Table 5. Cohort 1 Gr.2: SRRS Total Scores by Group and Site Controlled for Key Covariates

Site/Group	MSRP			Comparison			Total		
	n	*Mean*	*SD*	*n*	*Mean*	*SD*	*n*	*Mean*	*SD*
Site A	33	3.03	.65	28	3.04	.64	61	3.04	.64
Site B	28	3.31	.65	18	3.09	.61	46	3.22	.64
Site C	37	2.96	.62	26	3.06	.62	63	3.00	.62
Site D	27	3.13	.59	23	2.78	.88	50	2.97	.75
Site E	21	3.11	.72	6	3.48	.32	27	3.19	.67
Site F	10	2.96	.86	8	2.64	.84	18	2.82	.84
All Sites	156	3.09	.66	109	2.99	.70	265	3.05	.68

Note. *n*=sample size; *SD*=standard deviation. Key covariates = *mother's education, father at home, household size, household income, gender* and *age*. Analysis of covariance found significant effects for ***site*** ($p<.05$), but no significant effects for *program or program by site* on Gr.2 SRRS total scores.

Appendix Table 6. Cohort 1 Kg. / Gr.1 / Gr.2: SRRS Item Scores for Program Effects Controlled for Key Covariates

SRRS Item	Group / Grade	MSRP			Comparison			Statistical Significance
		n	*Mean*	*SD*	*n*	*Mean*	*SD*	
Retains learning	*Kg.*	212	2.47	.74	152	2.31	.76	$p<.05$
	Gr.1	210	2.51	.71	137	2.38	.77	$p=.077$
Ready to learn	*Kg.*	211	2.65	.57	152	2.53	.66	$p<.05$
	Gr.1	210	2.57	.64	138	2.49	.71	$p=.127$
Good attendance	*Gr.1*	207	2.70	61	135	2.61	.69	$p<.05$
Interest in school work	*Gr.2*	156	3.15	.73	109	3.04	.89	$p<.05$
Physical ability	*Gr.2*	152	3.31	.63	107	3.12	.68	$p<.05$
Social/emotional	*Gr.2*	155	3.09	.85	109	2.88	.87	$p=.113$

Note. *n*=sample size; *SD*=standard deviation. Key covariates = *mother's education, father at home, household size, household income, site, age* and *gender*.

Appendix Table 7. Cohort 1 Kg.: COR Subscale Scores by Group and Site Controlled for Key Covariates

Subscale	Site / Group	Site A			Site B			Site C			Site D			Site E			All Sites			Statistical Significance
		n	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*	
Initiative	*MSRP*	43	3.09	.61	43	3.56	.53	58	3.18	.65	41	3.59	.77	24	3.59	.60	209	3.37	.67	Program: $p < .001$ Program/Site: $p < .05$
	Comp.	41	3.19	.66	40	3.20	.57	36	3.12	.67	24	3.29	.71	35	3.03	.59	177	3.16	.63	
Social relations	*MSRP*	43	3.21	.57	43	3.56	.75	58	3.11	.66	41	3.51	.78	24	3.60	.67	209	3.36	.71	Program: $p < .001$ Program/Site: $p < .01$
	Comp.	41	3.40	.58	40	3.25	.66	36	2.99	.51	24	3.15	.76	34	2.90	.58	176	3.15	.63	
Creative representation	*MSRP*	44	3.78	.77	42	3.71	.56	57	3.63	.70	35	3.83	.94	24	3.92	.69	202	3.75	.73	Program: $p < .01$ Program/Site: $p = .06$
	Comp.	41	3.88	.54	40	3.48	.68	36	3.41	.60	23	3.65	.66	34	3.29	.77	175	3.54	.67	
Music & movement	*MSRP*	43	3.87	.65	43	3.76	.59	57	3.67	.66	41	4.13	.75	24	4.40	.42	208	3.91	.68	Program: $p < .01$ Program/Site: $p < .01$
	Comp.	41	4.09	.72	40	3.51	.63	36	3.73	.79	24	3.82	.59	35	3.70	.88	177	3.76	.76	
Language & literacy	*MSRP*	44	3.00	.53	43	3.17	.44	58	3.01	.45	41	3.58	.69	24	3.34	.75	210	3.19	.59	Program: $p < .001$ Program/Site: $p < .001$
	Comp.	41	3.22	.45	40	3.01	.52	36	3.04	.47	24	3.04	.50	35	2.72	.52	177	3.01	.51	
Logic & Math	*MSRP*	43	3.41	.59	43	3.28	.37	58	2.76	.87	41	3.82	.58	24	3.62	.63	209	3.31	.75	Program: $p = .17$ Program/Site: $p < .01$
	Comp.	41	3.60	.53	40	3.17	.54	36	2.90	.83	24	3.73	.61	35	3.04	.63	177	3.27	.70	

Note. Comp. = Comparison group; *n*=sample size; *M*=mean; *SD*=standard deviation. Key covariates = *mother's education, father at home, household size, gender* and *age*. Significant effects: $p < .05$; nearly significant trend: $.10 > p > .05$

Appendix Table 8. Statewide Risk Factor Data 1996: Distribution of Total Number of Risk Factors by Site

Site	Total Number of Risk Factors Per Child				Total Number of Children
	1-2	3	4	5 or more	
Site A	8 (10%)	16 (21%)	21 (27%)	32 (42%)	77
Site B	348 (24%)	371 (25%)	284 (19%)	470 (32%)	1473
Site C	4 (4%)	12 (11%)	23 (22%)	67 (63%)	106
Site D	38 (12%)	95 (31%)	88 (29%)	85 (28%)	306
Site E	51 (24%)	70 (32%)	48 (22%)	48 (22%)	217
Site F	54 (37%)	33 (23%)	32 (22%)	26 (18%)	145
Total	503 (22%)	597 (26%)	496 (21%)	728 (31%)	2324

Appendix Table 9. Cohort 1 PreKg.: Total Scores for Program Quality Assessment (PQA) by Study Site

Site	*n*	*Mean*	*SD*	Minimum	Maximum
Site A	5	4.14	.33	3.70	4.56
Site B	9	4.55	.36	3.82	4.90
Site C	11	4.34	.14	4.15	4.55
Site D	11	4.74	.18	4.27	4.89
Site E	7	4.59	.08	4.48	4.71
Site F	6	3.60	.28	3.21	3.95
All Sites	49	4.39	.42	3.21	4.90

Note. *n*=sample size; *SD*=standard deviation. Analysis of variance found statistically significant effects for ***site*** ($p<.001$) on PQA total scores.

HIGH/SCOPE
Educational Research Foundation